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PRIMARY BRONCHOGENIC CARCINOMA*

A Report of 47 Cases

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IT IS ESTIMATED that primary bronchogenic carcinoma now causes approximately 15,000 deaths[1] annually in this country. There is widespread agreement that the incidence of this disease is increasing. Statistics based upon routine autopsy studies[2, 3] prove beyond doubt that this increase is absolute and not merely relative. From 8 to 10% of all cancer cases reported are said to be of this type, and in comparison with other organs primary carcinoma of the lungs is second in frequency only to cancer of the stomach. Indeed, it now threatens to surpass the latter.

A generally acceptable explanation for the increased incidence of the disease is lacking. It has been suggested that the use of tobacco[4] may be an important factor since an accelerated rate of cigarette consumption has paralleled the rising morbidity of bronchogenic carcinoma. Note also must be taken of the fact that vital statistics show the average span of life has lengthened, which has resulted in a larger number of living persons in the susceptible age groups. Occupation apparently has played no important role.

Primary bronchogenic carcinoma is essentially a disease of the 5th, 6th, and 7th decades of life, the great majority occurring in these age groups. Males predominate over females in a ratio of about 4 to 1, a fact which is not easily explainable.

From a pathological standpoint it is universally agreed that this type of neoplasm always arises in the basal membrane of the bronchial mucosa and never from the alveolar epithelium. Three main types have been classified—namely, (1) squamous-celled or epidermoid, (2) adenocarcinoma, and (3) the small-celled, oat-celled, or undifferentiated. It is believed that varying degrees of metaplasia account for the different types noted. The undifferentiated carcinoma is the most malignant and metastasizes very early. Adenocarcinomas and epidermoids show proportionately lesser degrees of malignancy in the order given. Squamous-celled cancers at times are very slow growing and a number of cases[5, 6] have been reported that survived up to 8 years without treatment.

These neoplasms may spread (1) by direct extension, (2) (3) through the lymph and blood channels, and (4) to other portions of the bronchial tree by means of air borne emboli. Lymphatic dissemination is the most common method and has been observed in over 70% of the patients reported. The liver becomes involved in about 30% of all cases. The kidneys and adrenals are also common sites of metastatic lesions.

Roughly 80% of the growths originate in the trachea or major bronchi, a fact of diagnostic and prognostic importance. Lesions in these sites tend to produce earlier local symptoms than those more peripherally located, usually are slower growing, metastasize later, and the great majority are accessible bronchoscopically. The right lung generally has been found to be more frequently involved than the left.

The present report is based upon 47 cases of primary bronchogenic carcinoma observed at the Rhode Island State Sanatorium during the period between 1933 and August 1946. All but one of these were diagnosed ante-mortem, and 41 (87.2%) were histologically confirmed. The latter consisted of 23 epidermoids (20 males, 3 females), 14 adenocarcinomas (12 males, 2

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females), 1 undifferentiated (female), and 3 unclassified (all males).

The group was comprised of 41 male and 6 female patients, a larger than usual ratio of males over females. The youngest was 18 and the eldest 79 years old. Table I shows the distribution according to age groups. It will be noted that 91.4% were between 40 and 69 years old. The average male age was 55.1 and the female 40.3 years.

Table II indicates the location of the points of origin of the neoplasms. The left lung was the site of initial growth very slightly more frequently than the right (51% to 48.9%). Considered individually, the left upper lobe was conspicuously more frequently involved than any of the others. Because of the relatively small number of cases we do not feel that any special significance should be attached to this fact and are merely reporting it as an interesting observation.

The diagnoses with which these patients had been labelled just prior to sanatorium admission were as follows: pulmonary tuberculosis in 24 (51%), diagnosis deferred in 18, idiopathic pleurisy with effusion in 2, unresolved pneumonia in 2, and "cold" in 1. In all, 5 patients actually

TABLE I

Age Distribution

Under 20	1 (2.1%)	
20 - 29	0	
30 - 39	2 (4.2%)	
40 - 49	13 (27.6%)	91.4%
50 - 59	18 (38.2%)	
60 - 69	12 (25.5%)	
70 - 79	1 (2.1%)	
Average Age Females	40.3 years	
Average Age Males	55.1 years	

TABLE II

Primary Sites of Lesions

Right Lung		*Left lung*	
Upper lobe	7 (14.8%)	Upper lobe	13 (27.6%)
Lower lobe	5 (10.6%)	Lower lobe	7 (14.8%)
Mid-lobe	2 (4.2%)	Main bronchus	4 (8.5%)
Main bronchus	7 (14.8%)		
Lobe undetermined	2 (4.2%)		
Total	23 (48.9%)		24 (51 %)

presented evidence of pulmonary tuberculosis, only one of whom, however, manifested clinical activity. Of the entire group the possibility of neoplastic disease was suspected by the referring physician in only 7 (14.8%).

The procedures which were utilized in arriving at the ultimate diagnosis were the clinical history, physical examination, laboratory studies, roentgen examinations (including laminography and bronchography in a few cases), bronchoscopy, and exploratory thoracotomy. Aspiration biopsy was not employed. This measure is now looked upon with disfavor in most quarters.[1, 4, 7]

Wide variations were noted with regard to the symptoms presented by these patients, and no clear cut pattern was observed which could be considered pathognomonic for this disease. With few exceptions, the symptoms began very insidiously and in most instances the time of onset could only be determined with but relative accuracy. In 3 cases it was utterly impossible even to guess when the first symptoms developed. In the majority the earliest symptoms noted were of thoracic origin, but in 12 they were extrathoracic. The latter usually consisted of easy fatigue, weakness, and loss of weight. Two patients first consulted their physicians because of pelvic pain, in one of whom the complaint was due to a metastatic lesion and in the other was caused by a urological condition not concerned with the bronchogenic carcinoma found. The drastic symptoms of hemoptysis was the initial warning sign in only 3 patients, although it was noted more frequently in later stages of the disease. In Table III are listed the frequency of

TABLE III

Frequency of Symptoms

Weight loss	46 (97.8%)
Loss strength	43 (93.4%)
Cough	43 (93.4%)
Expectoration	36 (76.5%)
Chest pain	36 (76.5%)
Hemoptysis	28 (59.5%)
Fever	27 (57.4%)
Dyspnoea	26 (55.3%)
Anorexia	18 (38.2%)
Hoarseness	7 (14.8%)
Wheeze	6 (12.7%)
Fatigue	4 (8.5%)

symptoms reported. Weight loss, weakness, cough, expectoration, chest pain, blood spitting, fever, and dyspnoea were the most common. However, as an initial symptom, cough greatly outstripped the others (Table IV). In the beginning the cough was usually dry, becoming productive, as a rule, in from several weeks to a few months. At this stage the condition was frequently mistaken for an ordinary respiratory infection according to the histories obtained.

Generally speaking, symptoms such as fever, anorexia, loss of weight and strength, and dyspnoea were late manifestations, occurring after the disease had become extensive and/or complicated by such developments as major bronchial obstruction, lung suppuration, and metastasis. Most patients exhibited a weight loss averaging between 20 and 30 lbs. by the time the lesion was well established. Fever usually was of a low-grade type, rarely exceeding 101°. Large hemoptysis was very infrequent, blood streaking which tended to be repetitious being the rule. Chest pain generally was dull, aching in nature and was apt to be more or less constant, though varying in severity. Dyspnoea was commonly rather mild even in the presence of

marked pathology, although a very few did manifest severe shortness of breath. The latter was particularly true of those with pleural effusions.

From a diagnostic standpoint physical examination proved to be of limited value. It was chiefly useful in uncovering distant metastatic foci in a few cases. In 3 such instances biopsy tissue obtained from these sources provided the means for proving the diagnosis. One case each of recurrent laryngeal nerve paralysis, Horner's syndrome, and brachial plexus involvement was also observed.

TABLE IV

Initial Symptoms

Cough	29 (61.7%)	Alone	9 (19.1%)
Expectoration	9 (19.1%)		
Loss strength	8 (17.3%)	Alone	3 (6.3%)
Chest pain	7 (14.8%)	Alone	2 (4.2%)
Weight loss	5 (10.6%)	Alone	2 (4.2%)
Fatigue	4 (8.5%)	Alone	1 (2.1%)
Hemoptysis	3 (6.3%)		
Fever	2 (4.2%)		
Pelvic pain	2 (4.2%)	Alone	1 (2.1%)
Dyspnoea	1 (2.1%)		
Hoarseness	1 (2.1%)		
Undetermined	2 (4.2%)		

Chest signs varied widely depending largely upon the stage of disease and the presence of secondary manifestations. A few patients presented no abnormal findings at all, but the majority showed many deviations from normal. A critical review of the chest signs found revealed no single findings or combination which could truly be termed to be peculiar to this disease alone. These findings differed in no way from those commonly noted in other chronic chest diseases. The one abnormal sign to which much significance is usually attached is a unilateral wheeze, which results from encroachment of the bronchial lumen by the tumor mass. This has been observed fairly frequently by other[7, 8] but was present in only 6 (12.7%) of these cases. Rales generally were less numerous than might have been expected, considering the degree of pathological changes revealed by the X-ray.

Laboratory studies proved of inestimable value both from the standpoint of pinning down the diagnosis microscopically and in ruling out other suspected conditions. As previously mentioned, 41 cases or 87.2% were histologically confirmed. In the remaining 6 the diagnosis was based upon clinical evidence which was deemed to admit of no serious doubt.

Bronchoscopy provided 18 positive bronchial tissue biopsies and 1 positive bronchial secretion cell block. In the latter instance a tissue specimen was also obtained but proved to be negative for cancer cells. This experience points up the value of examining secretions as well as tissue. Herbut and Clerf[9] recently have given considerable emphasis to this type of investigation. In 30 of their cases secretions obtained bronchoscopically yielded 73% positive results compared with only 36% from biopsied tissue. Postmortem examination was the source of positive tissue in 12 cases (25.5%), while exploratory thoracotomy yielded an additional 6 (12.7%). Reference has already been made to the 3 positive biopsies of distant metastatic lesions, and 1 other was proved by a cell block of aspirated pleural fluid. Thus a total of 29 (61.7%) cases were microscopically proved while the patients were still living. In no instance were we able to find cancer cells in the sputum, although many specimens were examined.

A great majority of the patients had secondary anemia, which generally was mild to moderate in severity. Profound reduction of hemoglobin and red cells was rare. A few patients with neoplasms of low grade malignancy who had suffered but little constitutional impairment showed normal blood pictures.

X-ray examination of these patients yielded much information that was of value both diagnostically and prognostically. We were unable to establish an absolute diagnosis through this medium alone, but the roentgenographic findings often directed the course of further investigation by pointing the finger of suspicion towards neoplastic disease. Considered as a whole, the findings were remarkable because of the variety of shadows which the lesions cast on the X-ray film. These ranged from discrete mottling to sizable, dense areas of rather uniform intensity. Mottled lesions of limited extent tended to be most confusing particularly when present in an upper lobe because of their similarity to tuberculosis infiltration. The one case missed was of this type, and, to compound the confusion, the patient had sputum positive for tubercle bacilli and a destructive lesion of the right sacro-iliac joint, which consultative opinion held was due to tuberculosis. At autopsy the latter was found to be the result of metastatic carcinoma involvement.

Lesions which were manifested as a more or less homogeneous dense mass, as a rule, were rather poorly circumscribed, the margins tending to be somewhat hazy and indefinite. Exceptions were noted in those cases in which an entire lobe was involved and the margin of the lesion was marked off by an interlobar fissure. The amount of lung involvement ranged from part of a lobe up to an entire lung. Three cases had bilateral involvement due to metastatic extension. Centrally located tumors manifested themselves either as a thickening of the hilum structures or as fairly discrete rounded masses projecting from the lung root out into the adjacent pulmonary field. Fan-shaped shadows considered to be characteristic of lobular atelectasis were noted in 2 cases. Changes due to

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secondary infection and atelectasis obscured the picture, and it was usually impossible to determine where the primary lesion began and left off. Seven cases showed evidence of cavitation, and in 4 others there was massive pleural effusion which concealed the underlying pulmonary pathology. In 2 patients invasion of the chest wall was revealed by X-ray evidence of rib destruction.

Sectional radiography and bronchography were valuable investigational adjuncts in a few cases in whom bronchoscopy yielded inadequate information. The laminagrams in each instance provided more precise information regarding the size and extent of the tumor than was obtained from conventional X-rays. In one case the laminagrams clearly revealed a narrowed, distorted bronchus which was not visible bronchoscopically. This finding was considered to be of neoplastic significance.

Bronchography was performed in 6 patients. This form of examination was chiefly valuable in graphically demonstrating bronchial obstructions, particularly those beyond the range of the bronchoscope.

Of all the methods of investigation employed, exclusive of microscopic examination, bronchoscopy was without peer as a means of obtaining a positive diagnosis. A total of 39 patients were examined in this manner. It has already been noted that in 19 of these a positive histological diagnosis was obtained, representing 48.3% of the number bronchoscoped. Of the other 20, in 10 bronchoscopy was essentially negative, while in the remaining 10, abnormalities were found which were deemed sufficient to warrant a clinical diagnosis. If these latter 10 are added to the 19 microscopically proved, we have a total of 29 patients in whom bronchoscopy provided either a confirmed or clinical diagnosis. This amounts to 74.3% of the total bronchoscoped or 61.7% of the entire series. Eight patients were not bronchoscoped because of the following reasons: condition too poor—5, diagnosis established by biopsy of metastatic lesion—1, lesion considered to be beyond range of bronchoscope—1, carcinoma unsuspected—1.

In addition to its use as a diagnostic measure, bronchoscopy was also a valuable aid in determining the operability of these cases. Evidence of inoperability fell under 2 headings—(1) local direct extension of the neoplasm to an unresectable portion of the tracheobronchial tree and (2) extensive paratracheal lymph node involvement as indicated by marked fixation of the trachea and noticeable broadening as well as loss of mobility of the carina.

Exploratory thoracotomy was recommended in 17 (36.1%) patients and was actually performed in 14, 3 refusing consent. Five, when explored, were found to be unresectable and 9 (19.1%) underwent total pneumonectomy. No partial resections were done. Two of the pneumonectomy cases died on the 2nd postoperative day, while all five that were merely explored survived the immediate operation with no ill effects. Four others of the resected patients died of recurrences or metastases 3 months, 5 months, 5 months, and 7 months, respectively, after the operation. Three are still alive, the longest for a period of 7 years and 7 months up to the time of this writing. The others have survived, respectively, for 3 years 1 month, and 1 year 9 months. Thus far none of these has manifested any signs of recurrence or metastasis.

In all, 41 patients, or (87.2%) of the total, are now known to be dead. Contact has been lost with one patient who was explored in March 1945 and was found to be unresectable. It is reasonable to suppose that this man is now probably deceased. Besides the 3 pneumonectomy survivals two others are still living, both of whom have only recently been diagnosed. One of these is to be explored soon. The other was found to have tracheal involvement and so was considered to be inoperable. An ultimate fatal termination appears to be certain in this case. Exclusive, then, of the patient awaiting exploration, the maximum that can be hoped for is a total net salvage of only 3 cases, or 6.3% of the entire group. Of the 3 pneumonectomy survivals 2 had epidermoids and one an adenocarcinoma.

Roentgen-ray treatment was given to several of the inoperable cases, but in no instance did it result in any appreciable benefit. This is in keeping with most reports from other quarters. Most authorities agree that X-ray therapy is without curative value in bronchogenic carcinoma.

The average duration of life from the time that the first symptoms were noted of the known dead was 17.3 months. This does not include 3 cases in whom the histories were inadequate. Five patients lived for only 3 months. The longest known survival period was 33 months. Four patients died between the 3rd and 6th month, for a total of 9 who failed to live longer than 6 months after the disease first manifested itself symptomatically. On the other hand, 7 survived for 24 or more months. The average duration of life for 15 patients with epidermoids whose histories were reasonably accurate was 13.5 months. For 12 adenocarcinoma cases it was 10.8 months and for 3 with unclassified neoplasms 19.5 months. The one with an undifferentiated type lived for 9 months after the onset of symptoms.

The figures just presented relating to mortality and average duration of life compare well with reports from other sources. They tend to corroborate the conclusion that this is a highly fatal disease even under the best of present day circum-

stances. Untreated this affliction results in 100% mortality. During the past decade thoracic surgery has provided reasonably safe means for dealing curatively with this disease, but in spite of this the fatality rate has remained appallingly high. Reports from different surgical clinics show that the maximum net salvage that has been obtained in any group of cases has been around 19%[4], with others showing similar results in from 8 to 13%[7,10]. Thus we may say that primary bronchogenic carcinoma still destroys up to 90% of its victims in an average of between 1 and 1½ years after the onset of symptoms despite new advances in diagnosis and treatment. The reason for this is, of course, that too many patients reach the thoracic surgeon too late for curative treatment. Any disease which can kill such an overwhelming precentage of its victims when means for its cure are available surely constitutes a serious challenge. It must be obvious that the manner in which this problem is being met has fallen far short of the mark. We well might ask ourselves why we are failing to cope with it more adequately.

With this objective in mind, the case histories obtained from these patients were reviewed. In 44 the histories were considered to be reasonably accurate. Information was sought regarding the time factor between the onset of the initial symptom and the patient's first visit to his doctor, his earliest X-ray and the establishment of the correct diagnosis, respectively. It was found that:

1. Twenty-four, or 54.5%, of these patients sought medical advice within 1 month of the first symptom, 5 within 2 to 3 months, 4 in from 3 to 6 months, 4 in from 6 to 12 months, and 7 others in from 1 to 2 years. The average was 4.2 months.

2. In contrast to the above, only 6 (13.6%) were X-rayed within 1 month of the initial symptom, 13 within 2 to 3 months, 8 in from 3 to 6 months, 5 in from 6 to 12 months, and 12 in from 1 to 2 years. The average was 7.6 months.

3. No patient was correctly diagnosed within 2 months of the first symptom and only 2 (4.5%) in less than 3 months. Twelve were diagnosed in from 3 to 6 months, 11 in from 6 to 12 months, 14 in from 1 to 2 years, and in 5 the interval was over 2 years. The average was 12.4 months.

An analysis of the above figures reveals several informative facts. First, a majority of the patients sought medical advice immediately following the appearance of symptoms or shortly afterwards, although many were grossly negligent in this respect. Secondly, most of the physicians first consulted showed an unfortunate tendency to delay unduly in setting in motion proper investigational machinery. This is indicated by the average lag of 34 months between the time of the patient's first visit to a doctor and his initial X-ray. Thirdly, a lack of sufficient consciousness in the minds of the doctors regarding the possibility that this disease might be present must be presumed to have existed, since there was an average delay of 8.2 months between the time of the initial visit and the establishment of the correct diagnosis. This is further supported by the fact that in only 15% of the group was pulmonary carcinoma suspected by the referring physician prior to sanatorium entry.

The record, then, is one of delay compounded upon delay and must be accepted as, at least, offering a partial explanation of why so few patients were diagnosed when the disease was still in a resectable stage. Further recourse to the histories reveals that the chief reason for delayed diagnoses lay, in most cases, in the mildness of the earliest symptoms. These were frequently mistaken for ordinary respiratory infections, and not only the patient but too often his physician were prone to view them with no great alarm. Where the symptoms persisted or became worse, there appeared to be too great a tendency to classify many of these patients as tuberculosis despite the fact, and we regret having to report so, that the majority had not had the benefit of sputum examination. The inference, then, should be clear. Respiratory symptoms in patients over the age of 40, particularly in males, should not be passed off lightly, especially if they continue unduly long. Caution should be exercised before making a diagnosis of tuberculosis in the absence of a positive sputum. Unless the symptoms can be quickly and properly accounted for, the possibility of bronchogenic carcinoma should be considered, and steps either to prove or rule it out undertaken promptly.

While procrastination and indecision undoubtedly have played conspicuous roles in the continued high mortality of the disease, we feel that there is another factor of importance which must be considered. It will be recalled that 5 patients failed to survive beyond the 3rd month following the initial symptoms and 4 others died within 6 months. In contrast to this, 7 patients, exclusive of the pneumonectomy survivals, lived for 2 years and longer. It is generally conceded that the undifferentiated bronchogenic carcinoma offers practically no hope for cure because of its extreme malignancy. We failed to find in the literature even one single authenticated instance of this type ever having been successfully treated. If such has ever been reported, it has escaped our notice. Of the 9 who failed to survive beyond the 6th month, 7 had either adenocarcinomas or epidermoids, types which have proved amenable to curative surgery.

It seems to us to be somewhat paradoxical that the same disease can produce early death in some, while in others the survival period may be 4 or more times longer. The explanation for this must

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rest, at least in part, upon the manner of evolution of these neoplasms in different individuals. The subclinical phase during which the tumors start and develop apparently is widely variable in duration. In many it appears to be so long that the neoplasms have already passed beyond the curable stage by the time the first warning sign is manifested. If this is true, and there is good reason to believe it is, then our ability to reduce the present mortality rate is definitely limited no matter how proficient we become diagnostically. To what extent we are so limited cannot, of course, be estimated. There can be no serious doubt, however, of the advantage to be gained by discovering these tumors while they are still preclinical. Means must be found for accomplishing this before any appreciable inroads can be made on the fatality rate of the disease. Fortunately, an aid to this end already is available in this country. We refer to the tuberculosis case-finding machinery, which even now is being further expanded. The roentgenograms of all individuals over 40 included in tuberculosis surveys should be particularly scrutinized for shadows suggestive of neoplastic disease. Furthermore, we are of the opinion that routine X-ray examination of all persons over 40 years of age, at least once annually, would constitute a meritorious policy.

Summary

1. Forty-seven cases of primary bronchogenic carcinoma are reported. Forty-one were males, 6 were females, and 91% were between 40 and 69 years old.
2. All but one were diagnosed before death, and 41 were histologically confirmed. Sixty-two per cent were microscopically proved while still living. These were accounted for as follows: 18 bronchial tissue biopsies, 1 bronchial secretion cell block, 6 by tissue obtained by exploratory thoracotomy, 3 biopsies from metastatic lesions, and 1 pleural effusion cell block.
3. The symptoms and physical findings were highly variable and were of little or no specific diagnostic value.
4. Roentgenographic examination and bronchoscopy proved to be the most fruitful aids to diagnosis, particularly the latter. Bronchoscopy was also of considerable value in determining operability of the cases.
5. Fourteen patients were explored surgically, and 9 underwent total pneumonectomy. Two of the latter died on the second post-operative day, and four others died less than seven months later of recurrences and metastases.
6. Forty-one patients are known to be dead. One other, lost track of, must also be presumed to be dead. Three (6.3%) have survived after pneumonectomy without evidence of recurrence or metastasis as yet. Two others are still alive, though one has unresectable disease. The other is shortly to be surgically explored.
7. The average duration of life for 38 of the known dead from onset of symptoms to fatal termination was 17.3 months.
8. A majority of the patients sought medical care immediately after the onset of symptoms or shortly afterwards, yet there was an average time lapse of 8.2 months between the patients' first visit to a doctor and the correct diagnosis.
9. The earliest symptoms of bronchogenic carcinoma in these cases were commonly mistaken for ordinary respiratory infections. In later stages the condition was erroneously diagnosed as pulmonary tuberculosis in over 50% of the patients. Only 15% were suspected of having neoplastic disease by the referring physician. There is need for much greater awareness on the part of both laymen and physicians regarding the possibility of this disease in persons over the age of 40 who develop chest symptoms.
10. The authors believe that many patients with primary bronchogenic carcinoma are already beyond the curable stage by the time the initial symptoms appear. It is urged that efforts be directed toward discovery of the disease while it is still in a pre-clinical stage as a positive step in reducing the present high mortality rate by utilizing the tuberculosis case-finding machinery and by routine annual chest X-rays of all persons over 40.

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SOME OF THE LATE CLINICAL ASPECTS OF CAMPAIGN ACQUIRED TROPICAL DISEASES*

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THE QUESTION is occasionally asked today, "How often will doctors in civilian practice encounter the late stages of tropical diseases among service men who were exposed to these diseases in the tropics?" The answer to this question is "Not often," because most such diseases were recognized and treated during service by the medical branches of the armed forces. Yet just as recurrent vivax malaria is now occasionally met with among discharged service men, so may recurrent or late forms of other tropical infections come to the attention of civilian doctors. It is important that this possibility be kept in mind. The following brief case history will serve to illustrate the type of problem referred to.

H. K., a male, aged 21, was sent to a hospital for chronic care. He had been under observation for three months at another hospital with a stubborn illness and had there been carefully studied. His hospitalization was occasioned in the first instance by a furuncle on his leg. He had seen service in Italy and was sent to this country from there in 1944. He admitted that for a year or so he had been a bit breathless on exertion, and had noted a feeling of fullness and discomfort in his left upper abdomen. The features of his examination and study included marked pallor, an enlarged firm spleen extending below his umbilicus, a severe anemia with a red count just over 2 million, a well marked leukopenia, (white count of 2,000) and an extraordinary high plasma protein level, due to a plasma globulin of 6 grams per cent. The injection of adrenalin caused no appreciable change in his total white count. Extensive x-ray studies had not been revealing. The impression was that this patient suffered from some form of blood dyscrasia, such as aleukemic leukemia. He had been treated with this diagnosis as the most likely one, by transfusions and other measures, none of which had altered his clinical picture. The syndrome was clearly an unusual one. We were fortunate in having the opinion on this patient of Dr. Arthur A. Marlow, who had spent several years in China and who promptly recognized these features—anemia, leukopenia, high plasma globulin and enlarged spleen—as those found in the chronic form of kala-azar. A sternal bone marrow biopsy was done, and this showed unmistakable Leishman-Donovan bodies establishing the diagnosis as visceral Leishmaniasis, or kala-azar. Treatment for this condition was started, but unfortunately the complication of a ruptured colonic ulcer and peritonitis led to his death ten days after admission.

While this case was admittedly an unusual and even rare one, its parallels are not too unlikely. The purpose of this paper is to review briefly four forms of tropical disease that may be encountered among discharged service men who have been on duty in the tropics.

I

The first, most important, and most familiar to everyone, is amebiasis, or infection from endameba histolytica, which most commonly occurs in the form of amebic dysentery. It is clear that many instances of diarrhoea, some of them only transient, that occurred during either tropical or temperate zone service or in Japanese prisoner of war camps, were due to amebic infection. These infections were acquired through the ingestion of the parasite in its cystic form. Carriers without symptoms were probably the principal source of infection. Difficult sanitary conditions and the uncleanliness of native help, made acquisition of this disease in some quarters almost inevitable.

When recognized in its acute form, by the laboratory finding of either motile amebae or cysts (and there is no other way by which the diagnosis can be clearly proven) this disease can be successfully treated by modern methods. Some cases were not recognized in the service however, and others remained untreated for long periods. It is these, in whom the disease may have passed into a chronic form, with intermittent recurrences of diarrhoea due to amebic colitis, which all of us may see. There are three points about amebiasis of the colon that should be emphasized.

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(a) The severity of the disease is extremely variable. It may exist as a relatively mild infection with recurrent diarrhoea, crampy abdominal pain, with or without bloody stools. The stools are often bulky rather than watery. Amebiasis should always be entertained as a diagnostic possibility in any one, particularly an ex-service man, who presents this type of colonic disorder, whether mild or severe. Intermittent diarrhoea and abdominal pain are the points to remember.

(b) The diagnosis can only be established with certainty by finding either motile or otherwise recognizable ameba histolytica or cysts in a *fresh* specimen of stool. Routine stool specimens are notoriously unsatisfactory for this. The amebae rapidly disintegrate, and cysts may be few in number. If stools are examined, they should be examined on a warm microscopic stage within minutes and not hours after they have been passed. A useful technic to employ when the diagnosis is strongly suspected, and several stools have been negative, is to obtain on proctoscopic examination, with an ordinary serological pipette bent at a 45 degree angle and fitted with a suction bulb, a small amount of material from a rectal ulceration, or the base of a pin point hemorrhagic area which may overlie a superficial amebic abscess. Material obtained in this way may show many amebae when stool examinations have been repeatedly negative.

(c) In the third place, the diagnosis is of greatest importance because amebiasis is a serious disease and if not recognized and treated may produce disastrous results. The scope of this paper does not allow discussion of treatment in every detail, but the main points should be touched on. In the presence of symptoms, three drugs are essential:

1. Emetine hydrochloride. This should be given subcutaneously, 0.03 gms. (½ grain) twice a day for 6 to 8 days. Emetine is a toxic drug, should be given to patients only while they are confined to bed and should not be used in any patient with significant heart disease. Concurrently with the emetine the patient should receive
2. Carbarsone 0.25 gm. by mouth three times a day for seven days. This drug is contra-indicated in any patient with hepatic disease.
3. Carbarsone should then be followed by an organic iodine preparation, either diodoquin 0.6 gm. (10 grains) or chiniofon 1 gm. (15 grains) three times a day for seven days. It is important to emphasize that carbarsone and an iodine preparation should *not* be given at the same time.

In refractory cases, benefit may be obtained by retention enemas of 2 grams of carbarsone in 200 cc. of 2% sodium bicarbonate solution or 4 grams of chiniofon in 200 cc. of water. These should be given every night or every other night for five nights.

If the infection is present without symptoms or with very mild enteric symptoms, treatment by these mouth medications is called for without the use of emetine. The presence of liver abscess, another and a serious late manifestation calls for treatment with emetine and aspiration of the abscess with scrupulously careful technic. Open drainage should not be performed if it is at all possible to avoid it.

It should be emphasized that this program of treatment is advisable if the diagnosis is proven. In recurrent diarrhea where amebae or cysts are not found, it is better to treat the patient with other measures, including a course of sulfadiazine. There is risk in giving anti amebic drugs, especially emetine, just for a therapeutic trial.

II

Another disease that proved a serious hazard among our troops, in a much more localized zone of action, is that form of blood fluke disease known as Schistosomiasis Japonica[1]. This disease is endemic on the Islands of Leyte, Samar, Mindoro and Mindanao in the Philippines, and is acquired by the bite of parasites that live in fresh water. These parasites are dependent for their development on a certain type of snail, the snails having become infected from contamination of water by the feces of infected natives. The parasites are capable of penetrating the unbroken skin, so that any kind of contact with water from infested streams may lead to infection. This contact may be brief as from washing the hands or prolonged as from bridge building, bathing or wading, or working in rice paddies, as many of our prisoners had to do. Briefly, the parasite having found its way into the blood stream, matures in the intrahepatic portal system. In Schistosomiasis Japonica the adult parasite comes to inhabit, most commonly, the small tributaries of the mesenteric veins. Here the deposition of eggs by the female leads to minute abscess-like formations which in time rupture into the bowel. As a result eggs are passed in the feces, and their recognition there, again, is the only means whereby the diagnosis can be established with certainty. The acute stage of the disease which occurs within 5 to 6 weeks of the time of infection may vary markedly in the extent of symptoms it produces. Constitutional symptoms are common—fever, chills, headache, malaise, muscular aching, often abdominal discomfort or crampy pain, with which there may or may

not be diarrhoea. As in amebiasis, these symptoms are sometimes very transient, may clear up without treatment as a result of spontaneous remission, and the disease may pass unrecognized. In most instances among our troops however, medical aid was sought because of these symptoms and fever. An enlarged or tender liver and a leucocytosis with striking eosinophilia are the outstanding findings. Fortunately the majority of cases of acute Schistosomiasis occurred among troops in areas—such as Leyte—where the disease was known to be endemic, and where the medical corps was "on the alert", and recognized it in its early stages. Treatment for the disease consists of the parenteral administration of trivalent antimony compounds—either antimony and potassium tartrate or fuadin. Both are effectual, but both are toxic and must be given with caution.

It is not likely that we will encounter with any frequency the late stages of Schistosomiasis Japonica. Most of the cases, as noted, were recognized early and were treated at the time of onset. It is believed that the chemotherapy used by the armed forces instituted early will be effective in preventing the development of severe late sequelae. The untreated or recurring form of Schistosomiasis Japonica may go on over a period of several years to the development of intestinal proliferation and repair, resulting in thickening of the intestinal wall and papillomata formation. When this occurs in the rectum, the condition may be visualized by proctoscopic examination. Such a patient *may* have recurring abdominal symptoms with blood in the stools. As in amebic infection, careful examination of the stools, or of material from a rectal lesion, for the schistosoma eggs, should be made by an experienced laboratory technician. The eggs in such cases are harder to find than during the early stages. The eggs are about 80 microns in length, and are recognized by a spine on the lateral wall, near the end. In advanced cases, thrombosis of mesenteric vessels, and cirrhosis of the liver with ascites, anemia and leukopenia may occur. Such patients closely resemble the so-called Banti's syndrome. Metastatic lesions in other organs including the brain may develop and produce localizing symptoms and signs. The treatment for this condition calls for administration of a freshly prepared antimony and potassium tartrate solution given every other day in a course of 15 injections. This is the program adopted by the Army—both for early cases, and for treated cases that persist in showing eggs in the stools. It is important to point out that no ex-service man should be suspected of Schistosomiasis unless he spent time on Leyte, or other Philippine Islands, Japan or China. The disease is not transmitted from man to man unless the intermediate host—the snail—is present to infect waters, and fortunately that kind of a snail does not flourish in the United States.

III

A third condition that may possibly be encountered among ex-service men is visceral Leishmaniasis or kala-azar[2]. This is a generalized infectious disease involving the reticulo-endothelial system of the body. It is transmitted by the bite of the phlebotamus fly and there were many opportunities among our troops for exposure. People who have kala-azar in the acute form are usually acutely ill; the subacute or chronic form was not at all common among our troops. It should, however, be kept in mind. A case was recently reported[3] of a soldier returned from overseas who was at first thought to have subacute bacterial endocarditis. The clinical picture later looked more like aleukemic leukemia. One sternal marrow puncture was negative. On splenic puncture however, unmistakable Leishman-Donovan bodies were found. The patient was treated with a pentavalent antimony preparation, Neostibosan, and was cured.

Two points should be emphasized regarding kala-azar:

(a) The clinical features of the chronic form of the disease are emaciation, fever, enlarged spleen, anemia, leukopenia and a high blood globulin. These features may be present in many forms of severe blood dyscrasia. They should, suggest, however, the possibility of kala-azar in any soldier who has served in areas where the disease is endemic—namely in the Mediterranean area and the Middle East, in India, Burma and China. If kala-azar is suspected, sternal bone marrow or splenic puncture should certainly be performed to rule in or out this diagnosis.

(b) The second point is that adequate intravenous treatment for this disease with pentavalent antimony, in the form of the drug Neostibosan, has reduced the death rate from 80 or 90% to almost zero. The importance of making the diagnosis and instituting treatment is therefore obvious. Splenectomy is of no value, for the disease is a generalized infection, of which the enlarged spleen is only one manifestation.

IV

Finally a few words are in order about a disease which precipitated a great deal of fear and terror in many of our troops in some areas, largely because of its devastating effects among native population who have lived exposed to it for years. I refer to the disease filariasis, or Wuchereria bancrofti. One can imagine his own consternation if

continued on next page

he should meet up, face to face, with a group of South Sea Island citizens all presenting the disturbing features of elephantiasis and marked scrotal edema, particularly if one were told that their disease was transmitted to them by a mosquito and that the same kind of a mosquito bred and lived in that region. It is small wonder that it has taken weeks and months of reassurance to convince our troops that this kind of disfigurement and disability was not in store for them, particularly when they know that they were returned to this country as patients labelled "filariasis". It has created a problem which has been referred to as "filariasis hypochondriasis". Papers have appeared in the literature on the subject of psychosomatic aspects of filariasis[4]. The answer to the problem seems reasonably clear. A good many of our troops *did* become infected by this mosquito-born disease. They developed the characteristic symptoms and signs of early filariasis—fever, malaise, generalized lymphadenopathy, scrotal pain, tenderness and swelling, and attacks of lymphangitis. In a very few the micro-filariae were demonstrated in the blood; and in a few more the adult worms were found in biopsied lymph nodes. But all of them were returned to this country as soon as the diagnosis seemed reasonably certain and were treated in sizable groups in hospital centers. The experience at one of these centers was reported recently[5]. The course which these patients followed was generally one of progressive improvement interrupted at times with recurrent attacks of lymph node tenderness or lymphangitis. In none did chronic sweiling remotely approaching elephantiasis occur. Many of them still had palpable lymph nodes; some would occasionally develop recurrent lymphangitis which was treated symptomatically and lasted only a few days. But very commonly they were seriously concerned about their future and were sure they were "in" for further trouble. The experience generally has been that this is an ungrounded fear, and that reassurance opposing it is entirely justified. The serious late sequelae of filariasis are rarely seen in natives under the age of 20—a fact which means that long exposure and repeated re-infection is necessary to bring about the stage of elephantiasis. The fact that our troops were sent home as soon as early minimal infection seemed either evident or even likely, bespeaks very little possibility of future complications. And so if any of us see a veteran known or thought to have acquired early filariasis in Samoa, the Fijis, Wallis Islands or South China, we should calm his fears, treat him symptomatically and approach his problem from the standpoint of sympathetic encouragement and reassurance. There is no specific treatment indicated.

In closing, two points should be mentioned.

(a) The first is that while complement fixation tests or skin tests have been utilized in the study of all of these diseases, none of them is highly specific, the anigens are not easily obtained and there is little gain in waiting for them or depending on them to help make a diagnosis. If the diagnosis is suspected it should be confirmed by trying to find the parasite itself, be it in the form of ameba, cyst, or ovum.

(b) The other is that while on the one hand we should be mindful of these possibilities in appropriate instances, we should on the other hand run down carefully all epidemiological clues, and not be guilty of suspecting, for instance, schistosomiasis in a patient who spent his entire time on duty in this country and was never exposed to the dangers of Leyte or some other tropical island.

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THE TREATMENT OF HYPERTENSION WITH RICE DIET*

FRITZ BEHRENDT, M.D. *and* ALEX M. BURGESS, M.D.

The Authors. *Fritz Behrendt, M.D. of Howard, R. I., Psychiatrist, Rhode Island State Hospital for Mental Diseases. Alex M. Burgess, M.D., of Providence, Chief of Medical Service, Rhode Island Hospital.*

THE recent reports of Walter Kempner[1, 2] on the treatment of kidney disease and hypertensive vascular disease with rice diet suggest the desirability of additional studies of the effect of rice diet on patients who have been known as hypertensive for many years. The State Hospital for Mental Diseases has appeared to us to be an unusually suitable location for such a study. Because of the recording of blood pressures on annual physical examination it was possible to select a group of hypertensive patients who had been under observation for many years. The effect of rice diet could be studied without materially altering the mode of living as would occur if patients ordinarily living in the community were hospitalized for such a study.

Seventeen women patients were selected who had been in residence in the State Hospital from 8 to 36 years. The average duration of residence was 24 years. The records of all patients selected showed diastolic blood pressure readings of 110 mm. or over. Such readings had been recorded over a period of one to sixteen years with an average duration of seven years.

These seventeen patients were placed in a ward for their exclusive use. All were kept on regular ward diet between August 15 and September 25, 1944. This initial period of six weeks was devoted to establishing the usual range of blood pressure readings in each patient on regular diet and to performing physical and laboratory examinations. The following procedures were carried out: physical examination; eyeground examination by Dr. Harry Messinger, electrocardiographic studies; blood urea nitrogen and blood sugar determinations; urinalysis and urine concentration tests. Temperature and pulse were recorded twice daily on the clinical chart. Weights were recorded weekly.

Laboratory findings revealed no evidence of impaired kidney function except in two patients. These two patients will be discussed in greater detail later.

The retinal arteries were described by Dr. Messinger as "narrow and pale" in the majority of patients. Hemorrhages and exudates were seen only in the fundi of one.

Effect of Rice Diet

On September 25 alternate patients (nine) were placed on rice diet as described by Dr. Kempner. The following outline details the diet.

RICE: Any kind. Brown, polished, wild, etc. Boiled or steamed without salt, milk or fat of any kind (no butter, margarine, drippings, lard, grease, salad oil, etc.)

FRUIT: All kinds, preferably fresh (raw or stewed) but also dried, frozen, canned, or preserved. (No salt added). No nuts, dates or avocadoes.

SUGAR: White or brown, also honey. No syrups. (No Karo, etc.)

FRUIT JUICES: All kinds, fresh or canned. (No vegetable juices, no tomato juice).

FLUIDS: (Only fruit juices) limited to about 1½ to 2 pints daily.

ADDITIONAL MEDICATION PER DAY:

Vitamin A	5000 units
Vitamin D	1000 units
Thiamine chloride	5 mg.
Riboflavin	5 mg.
Niacinamide	25 mg.
Calcium pantothenate	2 mg.
Ferrous sulfate	0.6 gm.

The composite Chart I shows that within about a week of the introduction of the diet, the average blood pressures fell from a range of 170-190 systolic and 84-96 diastolic to about 150 systolic and 90 diastolic. Furthermore, this fall in blood pressure was maintained as long as the patients were on the diet. There was considerable variation in the degree to which the blood pressures of individ-

continued on next page

* Presented before the Providence Medical Association at Providence on December 2, 1946.

[1] Kempner, W.: (a) Treatment of Kidney Disease and Hypertensive Vascular Disease with Rice Diet, North Carolina M. J. 5:125-133 (April); (b) 273-274 (July) 1944.

[2] Kempner, W.: Compensation of Renal Metabolic Dysfunction. Treatment of Kidney Disease and Hypertensive Vascular Disease with Rice Diet, III, North Carolina M. J. 6:1-72 (February).

Weekly Averages of Blood Pressure Readings

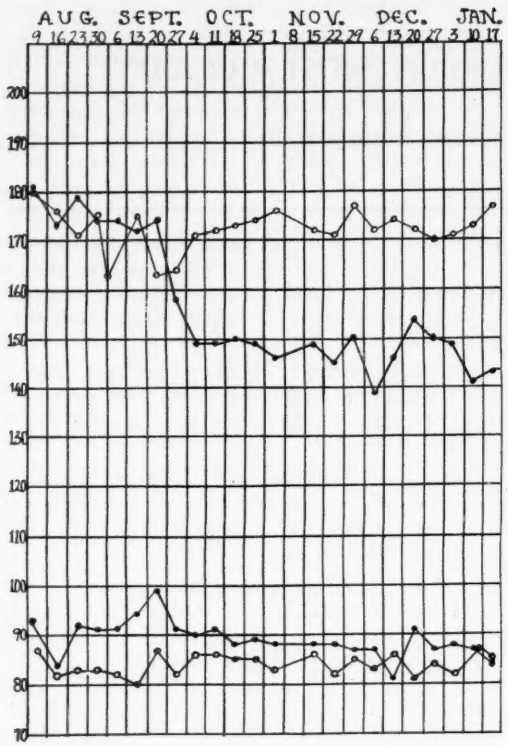


CHART 1

ual patients showed a response. In general, patients with the higher pressures showed greater responses though one patient with a very moderate hypertension showed a drop to within normal range. Only two patients failed to show a clear cut response.

During this same period of time, October 1 to February 1, none of the eight patients on ward diet showed a fall in blood pressure readings.

Eyeground examinations on August 23 (before diet) and March 29 (patients still on diet) showed no changes except in the control case EG (to be discussed below).

Electrocardiograms before diet and toward the end of the diet period showed no essential change.

Two patients showed definite evidence of impaired kidney function.

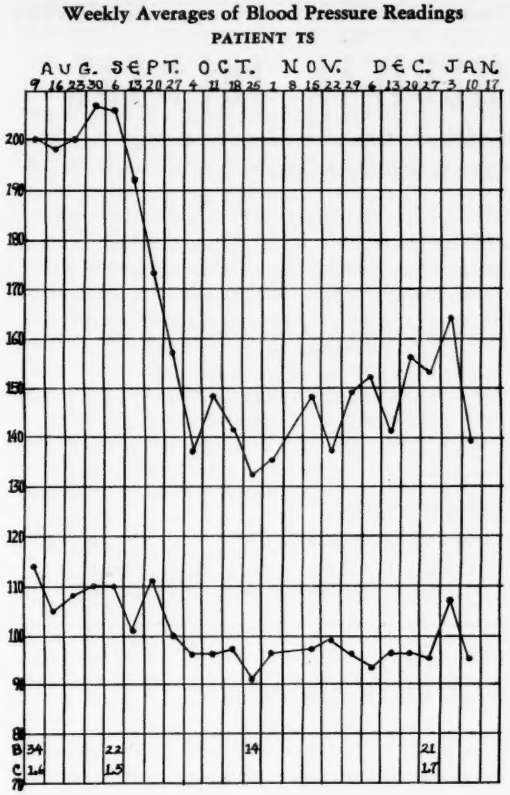
TS a fifty-two year old woman was first studied for hypertension at the Rhode Island Hospital in December 1930, at the age of thirty-nine years. The history stated that she had had occipital headaches and vomiting since the age of nine years and that she was said to have had hypertension at that time. Her mother and sister had high blood pressure. Her mother died of cerebral hemorrhage at the age of forty-five years.

In December, 1930, and January, 1931 fourteen blood pressure readings are recorded ranging from 230/130 on admission to 114/70 with, in general, lower readings after bed rest.

In January, 1931, one of us, Dr. Burgess, elicited a fall in blood pressure from 190/120 to 160/78 with amyl nitrate. Patient was again admitted to Rhode Island Hospital in June, 1931, because she had collapsed on the street on three occasions, and had suffered from headaches, dizziness and shortness of breath. Examination showed blood pressure readings from 230/130 to 180/110, slight oedema of the lower extremities, moderate cardiac enlargement to the left and downward, and a slight blowing systolic murmur at the apex and aortic area. Electrocardiogram showed beginning myocardial impairment. On her third admission in May, 1933, blood pressure readings were recorded as 200/120 and 220/120. Electrocardiogram showed evidence of further myocardial damage and X-ray showed considerable enlargement of the heart shadow with tortuosity of the aorta and prominence of the aortic knob. Urinalyses showed rare casts, rare W.B.C., rare R.B.C., and Specific Gravity 1.006-1.019. On her fourth admission in June, 1934, patient showed swelling of the ankles and abdomen, and a blood pressure range of 230/120 to 200/100. There were no noteworthy changes in the physical or electrocardiographic findings. At this time she slept with two pillows at night, showed palpitation on exertion and considerable dyspnea. She gave a history of occasional attacks of precordial pain brought on by exertion. The pain was sharp and ran through to the back. From August 6, 1934, until April 25, 1944, she resided in the State Infirmary. There the leading change in her condition was a progressive mental deterioration which was considered due to hypertensive encephalopathy. She became so unmanageable and abusive to other patients that she was transferred to the State Hospital for Mental Diseases.

The range of blood pressure readings during the initial period of study and the dramatic fall when she was on rice diet is indicated in Chart 2. It will be noted that there was a drop of about 60 mm. in systolic pressures and 15 mm. in diastolic pressures, and also a decrease in blood urea nitrogen values.

EG is a sixty-seven year old woman whose blood pressure was first recorded in this hospital in 1928.



B = Blood Urea Nitrogen in mg. per 100 cc.
C = Blood Creatinine in mg. per 100 cc.
Rice diet began during week of September 20.

CHART 2

At that time (age 50) blood pressure was 180/100 and hyaline casts were noted in her urine. There were readings recorded in 1930 of 195/110 and in 1933 of 210/128. In 1943, rare, fine granular casts were noted in the urine; blood urea nitrogen content was 37.5 mg. and blood pressure 230/120.

Throughout the period of the study patient was kept on a regular ward diet. Her blood pressure readings varied from 190 to 240 systolic and 98 to 120 diastolic. Blood pressure readings remained at a relatively constant level from August, 1944, to March, 1945, with a blood urea nitrogen value of 35 to 60 mg. She was placed on rice diet in April 1945. Blood pressure readings fell to 170/90-180/100, and blood urea nitrogen content dropped to 10-12 mg. She was returned to a house diet for about two weeks in August, 1945, with a return of blood pressure to 200/104 and blood urea nitrogen to 70.

Discussion

Kempner states, (2) "since, according to our hypothesis the rice diet acts by compensating renal metabolic dysfunction one may assume that in those cases in which blood pressure decreased under treatment the hypertension was not 'essential' but was due to some impairment of the metabolic function of the kidney". He adds that rice diet can be considered a therapeutic test to differentiate cases of essential hypertension from those due to renal dysfunction. In view of the fact that eight out of nine of our patients showed no evidence of renal damage and yet six of these eight showed definite response to rice diet we are inclined to differ with Kempner. We feel that the rice diet does not differentiate between hypertension on the basis of renal dysfunction and "essential" hypertension as both conditions may be modified by rice diet.

In Summary

1. Seven of nine patients showed a substantial drop of blood pressure about one week after being placed on a rice diet as described by Kempner.

2. Two patients who showed an elevated blood urea nitrogen when on house diet, showed normal values when on rice diet.

3. A decrease in hypertension occurred in patients both with and without evidence of kidney disease.

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INFLUENZA VACCINATION

INFLUENZA vaccination occupies a prominent position before both the medical profession and the public at this time. As is usual in writings addressed to the larger group the stand is unequivocal. The public's world is black and white. They have little use or admiration for the gray tints which the scientist so sorrowfully finds makes his accurate perception difficult.

Thus a popular article tells the public that there will be no large scale epidemic of flu this time; it can be scotched with a new vaccine which assures control.

Large groups of industrial workers, hospital employees, and others are now receiving mass treatments with the vaccine. Nevertheless, we hear of physicians of standing who apparently still have doubts and indecisions, and are not routinely giving all their patients this panacea at present. That an over-all picture of the medical attitude might be had we have asked two able internists to give the two viewpoints pro and con and we are printing them below:

Pro

Wide variations exist in the clinical picture of influenza virus infections. An Army immunologic investigation of upper respiratory tract infections in 1943 revealed that 40 per cent had been due to influenza virus A or B. In addition to being the cause of a relatively mild disease, albeit one that costs the loss of much time, influenza virus is sometimes associated with a severe disease like the epidemic of 1918.

The Commission on Acute Respiratory Diseases, after studying epidemics of influenza between 1920 and 1944, has pointed out that influenza A has a periodicity of two or three years while influenza B has a periodicity of four or six years. Based on this information an epidemic of influenza A was predicted for the winter of 1945-46. This did not occur, making the possibility of its appearance in the winter of 1946-47 even greater.

The vaccine now produced is a mixture of Influenza A and B virus cultured and harvested from chick embryo. This vaccine has been shown to raise the titer of antibodies against these viruses to a high level. This level is maintained for four to five months and then falls to about 50 per cent of its highest level at the end of ten to twelve months.

The army has made extensive study of the value of this vaccine. Among many thousands of soldiers vaccinated, only 2.2 per cent were admitted to army hospitals with "typical" influenza while 7.1 per cent of the unvaccinated were so admitted—a 75 per cent reduction in attack rate.

The vaccine does contain some chick protein and the danger to those individuals who are sensitive to

such proteins is obvious. It has also been pointed out that the possibility does exist of sensatizing individuals to such proteins and so making subsequent injections dangerous. In the December 12 issue of the Journal of the American Medical Association there is a report of the use of the vaccine in 108 known allergic children. Only 5 per cent were found to be sensative enough to warrant cautions in the administration of the vaccine—that is, by desensatization. The Surgeon General's Office has reported that serious reactions have been reported but the number of reactions known to have occurred are negligible in comparison with the number of doses administered—now in the millions. However, the physician should be alert to pick up a history of allergy—asthma, hay fever, eczema, intolerance to eggs, or the past administration of vaccine against influenza virus, typhus fever, or yellow fever—and either reject these individuals or do a preliminary skin test with the vaccine.

Possibly the greatest field of usefulness of this vaccine will be among large groups such as industrial plants, hospitals and schools where the loss of time occasioned by epidemics of upper respiratory infections causes the slowing down or even the complete breakdown of a closely integrated program.

Con

During recent months the subject of vaccination against influenza has been very widely discussed. As has been true with other therapeutic measures of wide popular appeal—such as the wholesale use of vitamins—there has been more clamor for its use by those outside the medical profession than by the doctors. It is, therefore, useful to examine the basic scientific facts involved before deciding on its value in the prophylactic treatment of large numbers of people.

The commercial vaccine now available is essentially the same that was developed and studied by the Army Commission on Influenza in 1943-44. It consists of a mixture of influenza A and B Virus, grown on egg yolk, and inactivated with formalin. Injection of 1 cc of this vaccine has been demonstrated to produce a variable degree of protection in large groups of individuals as compared with unvaccinated controls. The ratio of cases of influenza in the vaccinated and unvaccinated groups was found to be about 1 to 5.

There are, however, drawbacks to the general use of the vaccine. The duration of immunity is not known, but available evidence indicates that it may be quite brief, i.e., only a few months. Reactions, both local and constitutional, are fairly frequent, and as this vaccine contains egg protein, severe allergic reactions are occasionally encountered. This has prompted most workers in the field to refrain from giving the vaccine to individuals with any history of allergy. Finally it is often forgotten, especially by laymen, that even if effective, this vaccination provides no protection against the great majority of winter respiratory infections —the "colds" and "grippe" that are always with us. Even an epidemic of influenza, if and when it does come, may well not be due to either A or B virus and hence not influenced by the immunization.

The army itself, after vastly more experience with mass vaccination than any other agency, has apparently decided against its routine use, for the last published directives state that it is to be withheld and given only when directed in the presence of an epidemic. Conditions in camps with large bodies of men in close contact offer ideal conditions for the spread of such epidemics. Certainly in civilian practice and from the point of view of the individual patient there is much less reason for the use of the vaccine. In a review of the whole subject, published in the New England Medical Journal, 5 September '46, Edsall states that "at present there is no apparent justification for widespread or routine use of the vaccine, in the absence of a clearly defined epidemic of Influenza A or B."

INFANTILE PARALYSIS IN 1946

The report of the National Foundation for Infantile Paralysis for 1946 has recently been received. Receipts amounting to nearly sixteen and one-half million dollars are reported, one-half of which is retained in the treasuries of local chapters for office expenditures and medical and nursing care. Appropriations totaling seven and one-half million to virus research, six hundred thousand dollars for after-effects research, three million dollars to education and two and one-half million dollars for medical care. The expenditure of such a large sum of money implies corresponding responsibilities. Infantile paralysis is responsible for 22 per cent of all deformities. No disease creates greater apprehension than infantile paralysis because it may produce such tangible and lasting crippling in the victim. The March of Dimes campaigns, held annually at the birthday of the late President Franklin D. Roosevelt, has stirred the emotions of the public to a high pitch, especially in view of his own dramatic involvement as a patient. The recent prominence given to the Kenny treatment has served further to focus attention on this dreaded disease and to stimulate research with a view to its eventual eradication. It is open to question, however, if too much importance is not being devoted to the problem of infantile paralysis, in view of the greater crippling produced by heart disease, cancer and arthritis among the public at

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large. Governor Pastore sounded a timely warning on this point at the annual dinner of the Rhode Island Medical Society last spring.

The conviction of the public that they can handle medical matters better than medical men; a point of view which they do not hold towards engineering or legal problems for instance, is no where more evident than when poliomyelitis is concerned. The New England Journal of Medicine has just issued a well merited rebuke to a Boston columnist. In his omniscience, the product of several years at college and some more on Boston newspapers, he has chosen to criticize, in the far from judicious manner of his ilk, the methods of the state and local health authorities in handling an epidemic. This is in keeping with Hollywood's voluntary solution of one of the most difficult of orthopedic problems.

In order to clarify the situation in regard to our present knowledge of this disease, the American Orthopedic Association has authorized the publication of a Primer of Infantile Paralysis and preliminary proofs of the publication have been received. It is a concise and authoritative digest of our present knowledge of anterior poliomyelitis with especial reference to the more recent studies in etiology and in methods of treatment. As has long been recognized by orthopedic surgeons, nothing new in the way of therapy has been added by the adoption of the Kenny treatment. The old principles still prevail, but by the use of the Kenny methods, treatment has become more laborious and expensive without improving the end result. As one orthopedic surgeon has expressed it, "What is good is not new and what is new is not good."

No panacea has as yet been discovered to combat this disease at its onset, although it is probable that continued research will ultimately solve the problem. In the meantime the medical profession and the public at large may rest assured that no stone is being left unturned in the fight to conquer this affliction, particularly as it involves children. Cooperation between the medical specialties, nursing and sociological workers has been excellent. Stimulated by research and ample facilities for treatment in the larger medical centers, the care of these patients may be carried out with confidence even in remote areas.

LIFE WITHOUT MEDICINE

We have received the tenth anniversary number of Life, a beautiful and interesting magazine. With wonderful photography and clever concise writing it tells of the events and changes of these incredible ten years. The war is depicted, great industrial developments, social changes, the ravishing girls of the movies, the Rubens-like fat and naked ladies that our artists paint, the birth of a baby that was shown in the first number of this periodical and, again in the art portion, at least two episodes nine months premature to such an event.

What we searched for, however, was some reference to medicine's part. And this we found only in the advertisements. Advertising, like politics, makes strange bedfellows. To our mind the advertising of our great drug houses is of the highest quality, in marked contrast to the meaningless bombast so generally directed against one's sales resistance.

Thus Parke Davis has a page about pneumonia which is of genuine educational value. Here it is pointed out that many pneumonias can be successfully combated by the sulfa drugs and penicillin. In still another type streptomycin promises to be of value. They state that less than half as many Americans die now from pneumonia as in 1934.

The use of sulfa drugs to combat infection has developed almost entirely in the last ten years. Penicillin was freed for general medical use only three years ago and streptomycin is just beginning to be used. It is safe to say that the general lowering of mortality cited for pneumonia is due almost entirely to this newly-developed chemotherapy. The use of these agents is producing correspondingly gratifying results in meningitis and a host of surgical infestions as the venereal diseases.

Although blood transfusions as a practical matter date back at least a generation, the founding of blood banks and the everyday use of enormous quantities of whole blood, plasma and serum is a development of the past decade. And now the fractionization of blood is giving us products of great value in controlling hemorrhage, the communicable diseases, etc.

There are the more striking medical developments of a short era in which our profession made stupendous strides. Our delinquencies have been recited by strident voices from the President through Senator Wagner down to every organ of opinion in the country. It seems singularly obtuse that a consideration of the past ten years should give not a thought to our startling achievements.

"BE IT RESOLVED,....."

This is the season of year when the youth of America, at the high school level, gird themselves for the battles of the debating platform. Embryo researchers are delving into the files to accumulate information, factual and otherwise, to clothe the arguments by which they hope to win forensic victories over their colleagues.

Medicine has a particular interest in the national high school debate topic this year for it is on the resolution that the federal government should pro-

vide a system of complete medical care to all citizens at public expense. Congressional leaders, state and municipal authorities, industrial and labor organizations, co-operative groups, as well as men of medicine, have discussed and debated the question of voluntary versus compulsory national medical care at great length the past few years.

That the high school students are now exploring the question is most commendable from an educational point of view. But, mindful of Macaulay's saying that half-knowledge is worse than ignorance, we fear for the factual presentations of some of the debaters if they rely on reports we have read in recent months. Particularly do we have in mind the presentations on the Wagner-Murray-Dingell proposal, and the misuse of selective service statistics.

Unfortunately too much of the popular reading has stressed federal dependency, and there have not been enough presentations to offset clearly this trend in thinking. The action, therefore, of the Association of American Physicians and Surgeons to start a national essay contest on the American system of the private practice of medicine comes at an opportune time. The plan proposed calls for an essay of 1,500 words or less by a high school student on the subject "Why The American System of the Private Practice of Medicine Gives the Finest Medical Care the World has ever Known," with each county medical society furnishing cash prizes for local competition, the state medical society offering prizes for the three top winners, and the AAPS three prizes for the best essays resulting from the nationwide competition.

The program will undoubtedly win favor. It is a step from the passive to the progressive stage in presenting opportunities to explore the American system of voluntary medical care.

WELCOME HOME

The Rhode Island Medical Society reports the following Rhode Island physicians as honorably released from active duty.

ELPHEGE A. BEAUDREAULT, M.D., 441 South Main Street, Woonsocket

ROBERT E. CARROLL, M.D., 295 Angell Street, Providence

OSCAR Z. DASHEF, M.D., 202 Stadium Building, Woonsocket

GEORGE A. ECKERT, M.D., Newport Hospital, Newport

WILLIAM J. H. FISCHER, JR., M.D., 225 Morris Avenue, Providence

DONALD B. FLETCHER, M.D., 43 Cranston Avenue, Newport

ROBERT L. GARRARD, M.D., Charles V. Chapin Hospital, Providence

ISADORE GERSHMAN, M.D., 343 Thayer Street, Providence

BERT S. JEREMIAH, M.D., 614 East Avenue, Pawtucket

ADELE C. KEMPKER, M.D., Box 5, Howard, Rhode Island

JOHN A. KENNEDY, M.D., 194 Main Street, Woonsocket

WILLIAM L. LEET, M.D., 199 Thayer Street, Providence

A. LLOYD LAGERQUIST, M.D., 73 Willett Avenue, Riverside

VAHEY M. PAHIGIAN, M.D., 49 Villa Avenue, Edgewood

JAMES A. REEVES, M.D., 1404 Broad Street, Providence

RICHARD RICE, M.D., Newport Hospital, Newport

JACK SAVRAN, M.D., 295 Angell Street, Providence

HENRY E. TURNER, M.D., 101 Broadway, Pawtucket

EDWARD ZAMIL, M.D., 20 Greenough Place, Newport

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SCIENTIFIC ASSEMBLY OF THE RHODE ISLAND MEDICAL SOCIETY

(Joint meeting with the Providence Medical Association)

AT THE MEDICAL LIBRARY . . . MONDAY, FEBRUARY 3, 1947, at 8:30 P. M.

Check the date Now!

CLINICOPATHOLOGICAL CONFERENCES

Rhode Island Hospital

Name: K. C.

Age: 55

Physical Examination:

Pulse 80, respirations 20, blood pressure 140/70. No lymphadenopathy. *Thorax* was symmetrical, equal expansion but limited. *Heart:* Left border at the anterior axillary line, systolic-apical and aortic murmur. *Lungs* showed dullness and decreased breath sounds with rales on the left side. Right side was hyperresonant. There was weakness of the right hand.

Laboratory:

The x-ray taken on admission showed a diffuse, mottled infiltration throughout both lungs and was reported as suggestive of miliary tuberculosis with elevation of the right diaphragm and moderate atelectasis of the right lung and lateral scoliosis. Repeated two days later it was reported as indicative of extensive infiltrative pathology on both sides, more on the right, with moderate atelectasis of the right upper lobe. The entire base was reported as being suspicious of possible malignant neoplasm with extention from the mediastinum to the right upper lobe, secondary atelectasis and secondary lymphatic spreading in both lungs. The possibility of submaxillary tuberculosis with partial atelectasis of the right upper lung was also suggested. A lateral x-ray taken December 24th showed the usual shadow of interlobar fluid on the right.

From admission to this time palliative procedures were employed. The general impression was that the patient had carcinomatosis of some undisclosed primary site with generalized metastasis to the lungs.

A bronchoscopy was performed on January 16. Direct visualization showed, 2½ cm. from the carina on the right side, an apparent bulging of the mucosa into the bronchi obstructing it and just above this was a spur, horizontally located, about five times its normal thickness. Thin, frothy-like material was coming from the opening of the bronchus in this area. A specimen of the bulge on the floor of the bronchus was removed which, on study, was diagnosed as chronic bronchitis. The day following bronchoscopy she developed the aforementioned high temperature; the diagnosis of pneumonia of the right lung was made. She was treated with sulfadiazine with apparent good clinical effect within eight days. On January 18 a right thoracentesis was performed; a small amount of serous, semi-purulent material was removed which on examination showed a yellowish fluid containing a pelicle which was centrifugal. Microscopic description revealed fibrin, red blood cells and white blood cells, primarily polymorphs. There were small groups of large cells with a copious amount of cytoplasm showing no mitotic figures. There appeared to be mesothelial cells. No evidence of tuberculosis was seen. There were numerous, large empty vacuoles which presumably represented lipoid material. They were surrounded by large mononuclear phygocytic cells with foamy cytoplasm. The laboratory felt they were difficult to explain unless the patient had had some injection of fatty material such as lipiodol.

A thoracentesis was again performed on January 31. Her temperature, at this time, which was the 43rd hospital day, had again risen to 105 and she expired twelve hours later.

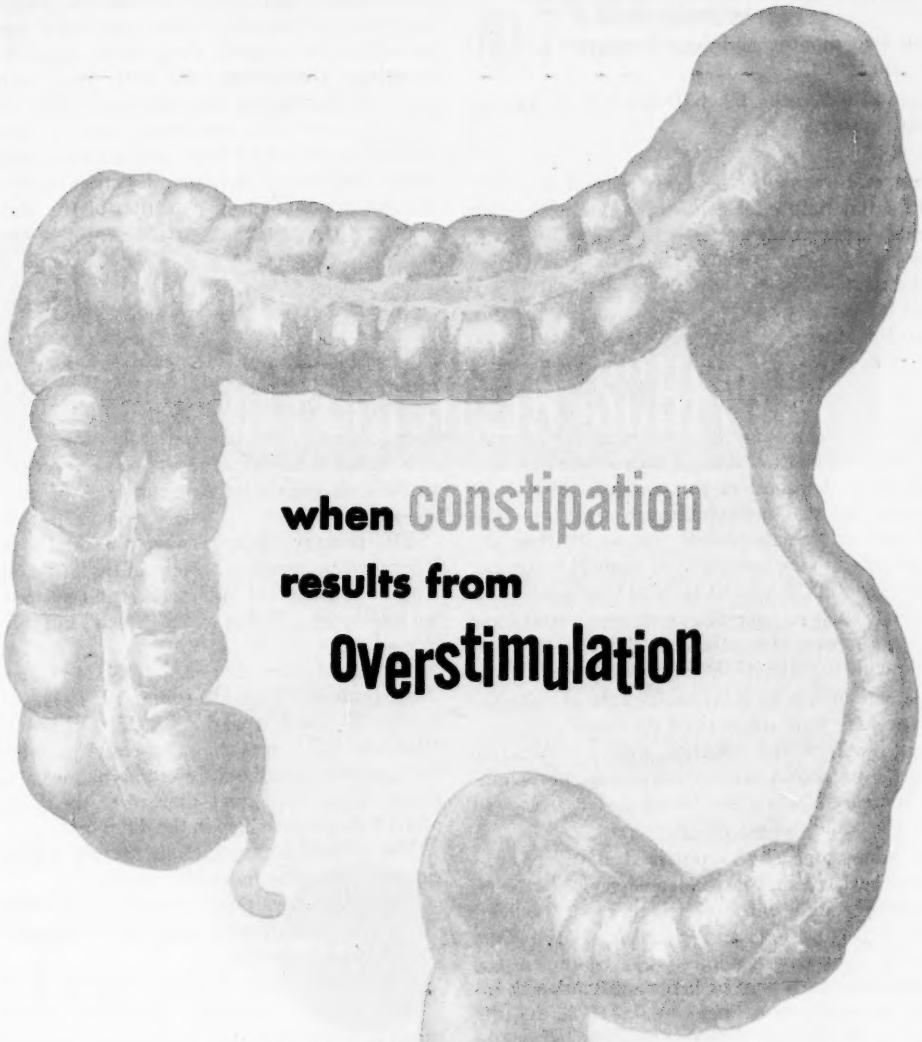
Other laboratory studies were: *Hematology: 12-19-44:* R.B.C. 4,030,000; W.B.C. 7,750, P.76, L.23, M.1. Hemoglobin 12.7. *1-11-45* R.B.C. 4,130,000; W.B.C. 9,300, P.79, L.17, M.3. *1-23-45:* W.B.C. 15,150. *1-25-45:* W.B.C. 18,500. *1-29-45:* W.B.C. 19,250, with 96% polys, 3% lymphs. *1-31-45:* W.B.C. 7,800.

Urinalyses: 1-19-45: Sp. Gr. 1.018; Protein 1, rare red blood cells. *1-20-45 and 1-21-45:* Essentially the same findings. *1-23-45:* Essentially the same except there were many sulfa crystals. *1-26-45:* Essentially as on admission.

Chemistry: 12-19-44: BUN 24; Glucose, 74, Total protein 5.7. *12-27-44:* BUN 22. *1-23-45:* BUN 21.

Sputa and urine were examined for acid fast organisms frequently and were always found negative. Fluid obtained from the pleural cavity negative for acid fast organisms but hemolytic streptococcus was grown out of the first fluid. A guinea pig was inoculated from the fluid obtained from the pleural cavity and it was killed two months later and found negative for acid fast. A guinea pig was inoculated from a urine specimen and killed

continued on page 34



when constipation results from Overstimulation

"Smoothage"—the term coined to describe the action of Searle Metamucil—seeks to avoid further irritation, to soothe and to protect the overstimulated intestinal mucosa, and to reestablish the normal reflexes of elimination.

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SEARLE

RESEARCH IN THE SERVICE OF MEDICINE

CLINICOPATHOLOGICAL CONFERENCES

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within two months and found negative for acid fast.

Electrocardiogram taken December 20 was essentially normal.

COURSE

Temperature varied between normal and 99.5 until the day before bronchoscopy, that is the 29th hospital day, at which time it rose steadily within thirty-six hours to 104.5 and subsided by lysis during the next ten days to the usual 99.5. This continued for two days after which there was a steady rise to 105 at which time respirations ceased.

* * * * *

DR. HARRINGTON: I will put these chest x-rays up so that we will all have an idea as to what was going on in the chest of this patient. This is an extremely unusual and complicating case, in which a 55 year old female patient was so ill when she was admitted to the hospital that medical treatment offered little in the way of help and surgical intervention, if such was deemed necessary, would seem to be too great a risk. She posed a problem that was difficult to solve while the patient was alive.

The patient was in good health until six months ago, at which time she noticed the onset of loss of strength, weight and appetite, plus a productive cough. Four weeks prior to admission, her symptoms increased, when she developed a new cold which she could not get rid of.

On admission, she complained of being extremely weak, dyspnoeic, had severe night sweats, productive cough without hemoptysis, but with foamy expectoration, and chest pains with the coughing. The day of admission, she noticed, for the first time, weakness of her right hand with inability to oppose the fingers or to hold objects tightly. It may have been this that caused her to come to the hospital.

When she was admitted physical examination showed the patient to have weakness in the right hand. The other positive findings were limited expansion of the chest, plus copious and extensive rales, some dullness. Her heart apparently was displaced to the left anterior axillary line. There appeared to be systolic-apical and aortic murmurs. The abdomen was negative. The extremities were otherwise negative. Blood pressure was essentially normal, 140/80.

From the physical examination alone, we might expect the patient to have had in one respect a cerebral disorder, producing neurological manifestations in the hand. However, the major pathology must necessarily be in the thoracic area. The only help that could be obtained to further the diagnosis in that regard would be from the x-ray. This diagnosis of extensive chest pathology was supported by the original x-ray which showed a few mottlings throughout the left lung, extensive mottling throughout the right lung, plus a rather definite, somewhat concentric area of increased density in the right hilus and another such area behind the sterno-clavicular junction on the right. To this was added an elevation of the right diaphragm, more than we would expect to find normally.

Regardless of whether the right hand entered the picture or not, the major pathology that we have to deal with in diagnosis is in the chest.

The blood studies were not of any help. As you can see, she had a red count of over 4 million, and over 70 per cent hemoglobin, and the white count was essentially normal, with the normal distribution of the cells. There would be no point in trying to tie a diagnosis into the findings of the blood stream.

The urinary findings were essentially normal. There was a one-plus protein in the urine, but in a chronic disorder of this nature and so extensive, we might say: "What of it?" It did not affect her immediately.

The blood chemistry was BUN 24; Glucose 74, Total protein 5.7 on December 19, 1944. On December 27, 1944, it was BUN 22. On January 23, 1945, the BUN was 21. The blood protein might have entered into the differential diagnosis, but the blood sugar does not; therefore, the laboratory offered no positive help in the diagnosis.

The physical examination merely located the site to investigate more thoroughly.

The x-ray does point out the extensiveness of the disease, and offers two possible diagnoses:

1. Miliary tuberculosis.
2. Carcinomatosis, probably metastatic.

Both of these, naturally, have to be stressed, because nothing else could be thought reasonable so early in the patient's hospital stay.

In an effort to prove tuberculosis, the urine was studied frequently, by direct smear, with guinea pig inoculations and by culture, and if tuberculosis were present, it didn't involve the kidneys. The sputum was also examined for acid-fast organism. That, too, was found negative. So if the patient had tuberculosis, she didn't have it in such a way that any secretions or exudate from the body would aid in the diagnosis.

I think that we can say she didn't have pulmonary tuberculosis. If she had pulmonary tuberculosis, so extensive, I feel that there would also be sufficient destruction to produce bacilli.

I would like to move on, now to the carcinomata. There was no primary evidence of carninoma. Pelvic examination was done, and although un-

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NO. 7 in Schenley Laboratories' continuing summary of penicillin therapy.

EMPYEMA:
treatment with PENICILLIN SCHENLEY

Penicillin exhibits a marked ability to sterilize pleural effusions whenever the infecting organisms are penicillin-sensitive. It is most effective when administered in large doses during the incipient stages. Patients should be observed carefully for at least two weeks after discontinuance of penicillin therapy to avoid possible recurrence.[1]

In the management of empyema, it is especially appropriate to apply the maxim:

give enough-soon enough-long enough

1. Poppe, J. K.: J.A.M.A. 129: 435 (Oct. 6) 1945.



PENICILLIN SCHENLEY. Treatment: Penicillin solution is injected directly into the pleural cavity after aspiration and after irrigation with sterile isotonic salt solution, if necessary. Penicillin should not be used for irrigation. The optimum dose for each injection is 50,000 to 200,000 units in a volume of solution less than the amount of fluid or pus aspirated. The frequency of injections depends on the extent, type, and severity of the infection, and the response to therapy. Treatment should be continued until after the fluid becomes sterile.



Surgical intervention is necessary if fibrin masses or loculation prevent adequate aspiration or if penicillin therapy is ineffective, as indicated by persistence of positive cultures after one week.



SYSTEMIC THERAPY. Systemic use of penicillin is indicated as a supplement to intrapleural therapy particularly where there exists an underlying active pulmonary infection or a bronchopleural fistula.

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Russell, H.G.B., abstracted, Proc. Roy. Soc. Med. 36:401.



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Benzedrine Inhaler

a better means of nasal medication

CLINICOPATHOLOGICAL CONFERENCES

continued from page 34

satisfactory, it was not so unsatisfactory that it bore repetition. It was not repeated. It was felt that there was no pelvic pathology. The patient at no time had abdominal symptoms. There was no reason to go into the abdomen. As far as the localized thoracic carcinoma or localized malignancy is concerned, that does have to be considered. In an effort to find a bronchogenic lesion, a bronchoscopy was performed, which showed a bulging of the right, main bronchus, and this bulging was interpreted by the bronchoscopist as a pressure from without. A biopsy of the mucosa from that area was reported as a chronic bronchitis.

That still left us not being able to make a diagnosis of carcinoma. Furthermore, with such a relatively good red blood cell picture, and hemoglobin, I think we would almost steer away from that temporarily, (4 million RBC and over 70 per cent, hemoglobin).

During this time, there was a neurological consulation and the opinion of the examiner was that the patient had a cerebral accident, or as he described it a right hemiplegia. I don't believe he offered a possible diagnosis as to why the hemiplegia was present.

In the course of the disease, patient developed a right pleural effusion. This fluid was aspirated and examined in the laboratory and reported as having some fat cells in it. It was thought by the laboratory that it could be explained by lipiodol. Since lipiodol was not used, we must assume it to be a chylothorax.

I think that now we must go definitely into the differential diagnosis of a condition which can produce such an extensive bilateral pulmonary mottling, large concentric shadows in the right hilus area, and a chylothorax.

My own feeling is that the essential pathology is not in the lungs either. The essential pathology appears to be in the mediastinum. In order to arrive at the diagnosis, we have to consider anything that could produce pressure on the bronchi and pressure on mediastinal lymphatics.

We will rather quickly rule out the cardiovascular system. Certainly, there is no reason to suspect that this patient had a pulmonary oedema, and it in no way falls in line with it. There was no evidence of cardiac enlargement. The aortic murmur and the systolic murmur could easily be explained. Any one of this age, 55 years, regardless of the etiology, might have such murmurs. However, aneurysm can produce pressure on lymph glands and cause obstruction of the drainage of the glands and cause obstruction and pressure on the bronchi and produce atelectasis and chylothorax, in other words, the picture we find here. However, if it was

continued on next page



aneurysm it couldn't be of the ascending portion of the aorta, because if it were, there would be exterior signs of the aneurysm, e.g., bulging through the anterior chest wall. Certainly there might be an aneurysm of the posterior portion of the aortic arch. Although we cannot rule it out, yet we have no supporting evidence of it. Furthermore, saccular aneurysm doesn't occur, or rather it is extremely rare in the female. With the lack of supporting laboratory evidence that could easily be determined, I could not entertain this diagnosis too long a period of time.

We have to consider solid tumors; neurofibromas, and sacromas. Even carcinoma has to be considered. Solid tumors, when occurring in the mediastinum, seem to produce more venous dilatation than this patient had. There was no report of such on her physical examination at any time, nor was there mention of venous distention about the neck and upper chest. Furthermore, solid tumors in the mediastinum are more apt to produce pressure necrosis, and pain along the intercostal nerve, resulting in severe pain low down in the chest and abdomen.

Discarding the solid tumors as causing the pulmonary picture, we are left with possibly a bony disease as the cause. We could think of a possible Pott's disease with the destruction of the bodies of the vertebra, with resultant abscess. Although there was some evidence of scoliosis, it wasn't great. In Pott's disease, of course, there is frequently an extension of the process intramuscularly. We frequently get the abscesses on the anterior chest wall. In Pott's disease, there is a burrowing, rather than extensive spread, such as this patient had. We are all familiar with the pathology which Pott's disease in the lumbar vertebrae causes. I would automatically discard this diagnosis rather soon.

It seems to me that this must be a soft tumor. It is not a solid tumor. It is not an expansile tumor. It must therefore be a soft tumor, and that soft tumor, I feel, is in the mediastinum, involving several of the glands, and besides that, it is also obstructing the flow of the thoracic lymph channels. This could be a hilus tuberculosis, or Beck's sarcoid. However, in Beck's sarcoid during the recent years, we have come to expect elevated protein, and elevated blood calcium, plus rarefaction in bone, none of which are here to support the diagnosis. We have no supporting diagnostic evidence so we may eliminate this entirely.

However, hilus tuberculosis is not uncommon. It was infrequent in the literature until 1914. During the first World War, it seemed as though it obtained much more prominence and was very much in the literature following that. It is a condition in which the primary focus present in the mediastinum glands, sometimes, in later life breaks down. It breaks down with a spread of the disease in any and all directions.

In this particular case, I feel that the spread was peripheral; it is not bronchial. I think that the shadows here in the hilus are tuberculous glands; they caused obstruction in the right upper lobe of the bronchus, with partial atelectasis, with resultant elevation of the diaphragm. I think, too, that the obstruction affected the thoracic duct, with a partial or early chylo-thorax. I can in no other way explain fat in the fluid from the right thorax. Certainly, the patient did not have lipiodol. Patient must have had a chylo-thorax on the right.

I am not completely leaving out the neurological picture. I explain the hand paralysis as a brachial neuritis. It is not unusual when any tumor or gland causes pressure in the brachial plexus to observe a wasting of the hand affected.

DR. CLARKE: Is there any discussion of Dr. Harrington's case.

DR. HAM: What was the lateral plate?

DR. HARRINGTON: The lateral plates also showed that this disease was progressive. During one phase in the development of the pleural fluid they revealed an interlobar fluid, which didn't remain localized, and spread so that it could be aspirated. I think this is what was interpreted as an interlobar fluid, by the x-ray man.

DR. HAM: It seems to me that this is rather a rapid and progressively fatal process to be explained on a basis of T.B. or a lymphatic disease. You would think in either of those conditions that you would have had more prolonged symptoms and a gradual wasting with the T. B. to be fatal, whether it was primarily the glands or what-not. You would also expect eventually to have gotten positive sputum. The glands of T.B., per se, I don't think, would cause fatality in this way.

Now, there was not a great deal said about the left side. There is some infiltration there. They suggested the possibility of metastatic process, which could be explained, of course, primarily on the malignant process.

With the lateral plate, too, it suggests atelectasis, in the middle lobe, and probably some fluid, too.

So I rather feel that more likely it is a carcinoma of the primary kind in the bronchus.

As to the lesion in the hand, there isn't enough detail given to be sure about.

DR. CUTTS: I should like, also to put myself down as favoring mediastinal tumor of some sort, with extension into the lung, either malignant lymphoma or carcinoma. I believe, probably, that the pulmonary condition and the neurological changes will be connected, because there is commonly a sequence of events which infection or tumor of the lung is the first and secondary cause

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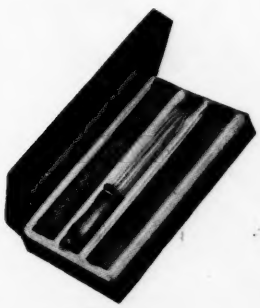
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CLINICOPATHOLOGICAL CONFERENCES

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to the brain.

DR. CLARKE: The head was not opened; I can tell you nothing about that. In each pleural cavity, there was more than a litre of fluid. Both lungs were collapsed from the pressure of fluid, and almost airless. On the right, the lung is described as having numerous small areas of necrosis, which I gather from the wording was a grayish, whitish material. Evidence of fibrosis was interpreted as being tuberculosis. The opposite lung had no necrosis, but there were numerous small nodules 2 or 3 m. m. in diameter, scattered throughout the lung.

The mediastinum was negative. There was nothing in the mediastinum, except some rather small lymph nodes that showed anthracosis. There were a few small scattered nodules in the liver.

When we came to the microscopic examination, we found that all of these tiny nodules in the lung are composed of a tumor. I forgot to say that there was no bronchial tumor demonstrable.

We have multiple tiny tumors scattered throughout the lungs, with no point of origin evidence.

Now, I shouldn't bore you with the disagreements of pathologists, but there are two possibilities under those conditions.

First of all, there is metastatic carcinoma, which is variously described as a carcinoma lymphangitis or diffused infiltrative lymphangitis metastases. This simply means that certain tumors metastasize, by way of the lymphatics, and the two organs are involved. The majority of such cases are found in the stomach.

Now, it is notorious that carcinoma of the stomach is frequently difficult to recognize grossly. There is a diffuse infiltrative type that causes little, gross distortions of the stomach. So that some writers maintain that in those at which no primary was found, it was just a mistake; it was overlooked.

Well, now, in our particular case, there is no description of the stomach. The gastrointestinal tract tends to be normal. Now, we depend upon microscopic findings to check things that are missed grossly, when we come to go over the microscopic sections, so that we have no very convincing evidence. There is another idea about these tumors that they are primary in the lung. These tumors have some distinctive features. The tumor cells tend to line the alveolar sac, so that we have large cells here (indicating) and the thing is essentially a normal lung, except for the lining. They frequently secrete mucous in the lumen.

In some cases of that sort of histology, with no evidence of malignancy, they are called adenomatosis of the lung. It is compared to a similar disease found in sheep. In addition to this rather distinctive lining of the alveolus, there is one point in this particular case that, in my opinion, is in favor of this primary origin of the lung, and that is, the lymphatics in the lung are not particularly involved in the carcinomatous lymphangitis; about the small blood vessels, you find the lymphatics stuffed with tumor all through the lung. There is no such lymphatic involvement in this lung. The only lymphatic involved in this lung is in the pleura which is metastatic.

In my opinion, we have alveolar carcinoma of the lung. When I use that term, I am only using a word that is descriptive and it doesn't necessarily originate from the alveolar epithelium.

I think that this patient had a primary carcinoma of the lung, with metastasis of the liver.

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HOSPITAL ASSOCIATION OF RHODE ISLAND

Report of the Annual Meeting

At the annual meeting of the Hospital Association of Rhode Island which was held at St. Joseph's Hospital on December 6th the following officers were elected to serve for the year 1947.

President, Oliver G. Pratt, Director, R. I. Hospital

Vice-President, William Sleight, Asst. Director, Homeopathic Hospital

Treasurer, Norman Wigglesworth, Asst. Controller, R. I. Hospital

Secretary, Francis C. Houghton, Business Manager, Butler Hospital.

Formal appreciation was extended to the retiring President, Leroy Cox, Superintendent of the Woonsocket Hospital, for his outstanding work of the past two years.

In a review of the year 1946 it seems fitting to list some of the problems which have faced the Association and its members, both personal and institutional, as well as to take a brief look at those issues which must be considered in the year just commencing.

As an organization we have grown slightly in stature, having accepted nine new members during the year and having lost five, two by death and three by resignation.

As an organization we have considered personnel policies and practices for hospital employees. The matter of salaries has been freely discussed and the recognition that they should be and were increased was weighed against the additional cost to patients. In considering the entire subject of increased hospital costs, the viewpoint and pocket book of the consumer of hospital services has never been neglected.

The allowance for Workmen's Compensation cases has likewise been studied. In view of rising costs and consequent inadequate allowance for this type of case it is planned to introduce legislation during the coming year which will more nearly permit hospitals to receive proper compensation.

It was learned during the year that Hospitals in many of the Atlantic States receive discounts from normal business rates from their suppliers of telephone service. Steps have been taken to obtain such a discount for the Hospitals of this State.

The Hospital Survey and Construction Act which was passed by Congress during the year provides a whole new set of problems to be met and properly handled. This Association is backing the State Department of Health in this respect and when the work has been completed the citizens of Rhode Island should have a clear inventory of their hospital facilities as well as a picture of their future needs, and perhaps a portion of the cash needed to meet such needs.

Since the Hospital Association cannot take any action that is binding upon its individual institution members, there are a series of problems which each member has had to contend with during the year and in which each has been aided through group discussion.

In this category personnel shortages have received much attention. United efforts have been made to recruit hospital workers. At least two hospitals now have full-time personnel directors. It is hoped that their advice and experience will be of benefit to the Association within the new year.

Shortages of various food items, construction materials, medical supplies and equipment have had and still have to be overcome. Substitutes and makeshifts have been used. New and vital construction has been held up.

Although the income of most hospitals has increased and in many cases reached an all time high, expenses have usually climbed faster with the result that most institutional members of the Association have ended the year with an outstanding deficit.

Several of the hospitals have been conducting fund raising campaigns to add new and more modern facilities. Modern in this case means in the sense that the facilities will save more lives, get people well more quickly and more surely. When the campaigns were started building costs were lower than at present. The result is that although the original goal may have been reached the hospital is still in need of additional funds. Here is a real problem which must be faced in the new year.

The Blue Cross of Rhode Island, which holds membership in this Association, has done an outstanding job both for the citizens and for the hospitals of our state. The Rhode Island Blue Cross

continued on next page

leads all the states of the country in having enrolled the highest percentage of eligible members. A problem still unsolved, but of concern to the Blue Cross, to the Hospitals, to the physicians and to the citizens of Rhode Island is that of a plan for medical and surgical care similar to the Blue Cross Hospitalization Plan. It is to be hoped that 1947 may become the inaugural year for such a program.

Doubtless other and new conditions are ahead of us. Some of the conditions will tend to solve the puzzlers of 1946 and some will pose new questions. The Hospital Association of Rhode Island anticipates that in this new year it may be of greater benefit to its members and thus to its fellow citizens than ever before.

R. I. H. HONORS CHIEFS OF STAFFS

The Active Staff of the Rhode Island Hospital on December 10th, at the Narragansett Hotel, staged a most agreeable and courteous good bye to the retired and retiring Chiefs of Staff.

It was a particularly informal and happy occasion, when two hundred doctors, the President and several members of the Board of Trustees, the Director of the Hospital and others, gathered to do honor to those twenty-four men who largely have guided the professional destiny of the Hospital during recent years.

The "Festival Chorus" functioned with its usual vim and harmony; there came to many a listener the familiar line, "age cannot wither—nor custom stale his infinite variety", or perhaps to others the more modern phrase—

" 'At-a-boy! Bert!"

The after dinner speakers (unavoidable on such occasions and voted average good that evening) were presented in happy vein by a toastmaster nimble of wit and with agile and retentive brain for verse. They, in turn, discussed the past and present of the Hospital and were followed by Mr. Pratt, the Director, who thrilled the audience with a vividly alluring picture of its future. Generous applause was offered in response to these efforts, which it was evident were appreciated and enjoyed.

Then came the evening's high spot as Mr. Gerry, new President of the Board, presented memorials, diplomas or what-nots, to the guest Chiefs; with well chosen and pointed words, he gave each to understand that he personally had been "something". The Staff opinion of its new Commanding Officer incidentally, may be summed up thus: "Keep an eye on him, as he surely will on us!"

The men thus honored that evening felt deep appreciation for the genuine friendship shown by their fellows and expressed the hope that this, together with an abiding loyalty, might pass on to their successors and to the ever greater Rhode Island Hospital.

The final universal comment on this truly wonderful occasion was "It deserves an encore."

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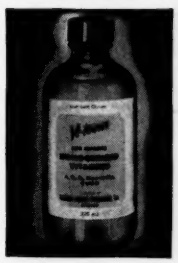
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leads all the states of the country in having enrolled the highest percentage of eligible members. A problem still unsolved, but of concern to the Blue Cross, to the Hospitals, to the physicians and to the citizens of Rhode Island is that of a plan for medical and surgical care similar to the Blue Cross Hospitalization Plan. It is to be hoped that 1947 may become the inaugural year for such a program.

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BOOK REVIEWS

SYNOPSIS OF PATHOLOGY, By W. A. D. Anderson. 2nd Edition, Illustrated, 741 pages. C. V. Mosby Co., St. Louis, Missouri. 1946.

This Synopsis of Pathology is concise but comprehensive and is intended for medical and dental students as well as for the clinician. The essentials of the subject are well presented and patterns of disease are not obscured by a maze of detail. For finer detail and variations in disease processes the author refers the students of medicine to the many fine larger textbooks of pathology.

The organization of the book appears satisfactory. The first part deals with pathology in general and the second part deals with the pathology of special systems.

The volume is full of illustrations most of which are excellent. 15 plates are in color.

At the end of each chapter is a carefully selected list of references.

Though a thorough student of medicine could not possibly limit himself to a synopsis of this kind, especially in the vast field of pathology, nevertheless, the volume is an excellent source of reference material and is highly recommended.

MICHAEL DIMAIO, M.D.

THE MANAGEMENT OF FRACTURES, DISLOCATIONS AND SPRAINS. By John Albert Key, B.S., M.D., and H. Earle Conwell, M.D., F.A.C.S. Fourth Edition, pp. 1322 with many new illustrations. Cloth, $12.50, The C. V. Mosby Company, St. Louis, 1946.

The fourth edition of Key and Conwell's book, one of the standard treatises on the treatment of fractures and dislocations, has been revised to incorporate the newer methods and techniques in in the treatment of bone and joint injuries, including those evolved during the war. The principal changes have been made in the sections on the spine, the hip, and on compound fractures. Approximately 200 new illustrations have been added throughout the book.

In the chapter on "Compound Fractures and War Wounds", the authors state: "(We) now debride all compound fractures, except those caused by high-speed bullet wounds. These are not debrided because the bone is comminuted and such fractures tend to do better if treated as simple fractures, except that the wound is painted with an antiseptic and the patient is given sulfathiazole by mouth." There are many surgeons who will take issue with this statement. Many innocent-appearing perforating bullet wounds of the extremities were found to conceal extensive soft tis-

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BOOK REVIEWS

continued from page 48

sue destruction during the war, and required thorough debridement.

The authors advise the local application of sulfanilamide or sulfathiazole powder, preferably a mixture of both, in compound wounds. This is a controversial practice, and extensive studies in the Army hospitals failed to show this procedure to be of value in the healing of compound wounds. In general, wound healing appeared to be delayed by the local implantation of sulfonamides.

In describing Dickson and Diveley's technique of closure of chronic osteomyelitic wounds after thorough saucerization, the authors state: "Two days before operation the patient is started on—penicillin (1,000 units every 3 hours)." Obviously this is a typographical error, *10,000* units being meant. The present tendency is to use larger doses (25,000 to 50,000 units every 3 hours) of penicillin.

The authors place inadequate emphasis on the role of x-ray examination in the diagnosis and treatment of fractures, and state that "a large percentage of fractures can be adequately diagnosed and even treated without the aid of x-ray." They present the use of wooden splints in fractures on the forearm and wrist, which may give a false feeling of security to the general practitioner in the immobilization of certain of these fractures. The reproductions in the book are numerous and good, although the clarity of many of them could be improved to advantage.

In general, Key and Conwell's book is deservedly one of the most popular and widely read texts on fractures and dislocations, and is a valuable reference for both the orthopedic and general surgeon, as well as for the general practitioner who has occasion to treat bone and joint injuries.

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DISTRICT SOCIETY MEETINGS

NEWPORT COUNTY MEDICAL SOCIETY

A meeting of the Newport County Medical Society was held at the Newport Hospital on Tuesday evening, November 26, 1946.

The meeting was opened at 8:57 p m., with Dr. Alfred M. Tartaglino presiding.

The minutes of the October meeting were read and approved.

There was no old business.

A communication was received from the Camp and Hospital Committee of the Newport Chapter of the American Red Cross requesting a donation towards Christmas gifts, which are provided for the patients at the Newport Naval Hospital. Upon the motion of Dr. Norman M. MacLeod, which was seconded and passed, the matter was referred to the president and treasurer with power.

The speaker of the evening, Capt. Robert E. Baker, MC, USN, Chief of Surgery at the Newport Naval Hospital, was then introduced. Taking for his subject, "Early Ambulation," Dr. Baker explained his experiences, both before coming to Newport and in his capacity as Chief of Surgery at the Newport Naval Hospital, with the early activity of post operative patients. In a very unbiased and complete discussion of the pros and cons of the matter and with several amusing anecdotes, which had resulted from over enthusiastic application of the principle of early ambulation, he covered the field with fairness and without being dogmatic. He listed the advantages which he felt resulted from having patients out of bed early. He listed a number of very definite contra-indications to early arising, and he stated that his policy had been to encourage patients, that he felt were suitable for early rising, to get out of bed fairly early, but that no patient was forced out of bed before he was willing to do so.

A question period and general discussion followed the reading of Dr. Baker's paper.

The meeting adjourned at 10:00 p. m.
A collation followed.

Respectfully submitted,
HENRY W. BROWNELL, M.D., *Secretary*

KENT COUNTY MEDICAL SOCIETY

The regular monthly meeting of the Kent County Medical Society was held at the Tollgate, Westcott, November 14, 1946, at 5:00 P. M. Dr. Merrill presiding, motion was made that the reading of the minutes of the last meeting be dispensed with.

Motion was then made by Dr. Tefft that the chair appoint a nominating committee for election of officers for the ensuing year at the December meeting. Dr. Merrill then named Dr. Fenwick Taggart, Dr. Royal C. Hudson and Dr. George Farrell as nominating committee. The chair entertained the motion that the next meeting be the annual meeting and scheduled for December 12.

After discussion motion was made by Dr. Fernand Hemond that the subject of contribution to the Community Chest be tabled until the annual meeting.

Dr. Merrill Gibson was then introduced and spoke on vagotomy in the treatment of peptic ulcer, a subject of very timely interest and importance. A rising vote of thanks was given Dr. Gibson for his excellent talk.

The meeting was adjourned at 6:00 P. M.

Respectfully submitted,
JEANNETTE E. VIDAL, M.D., *Secretary*

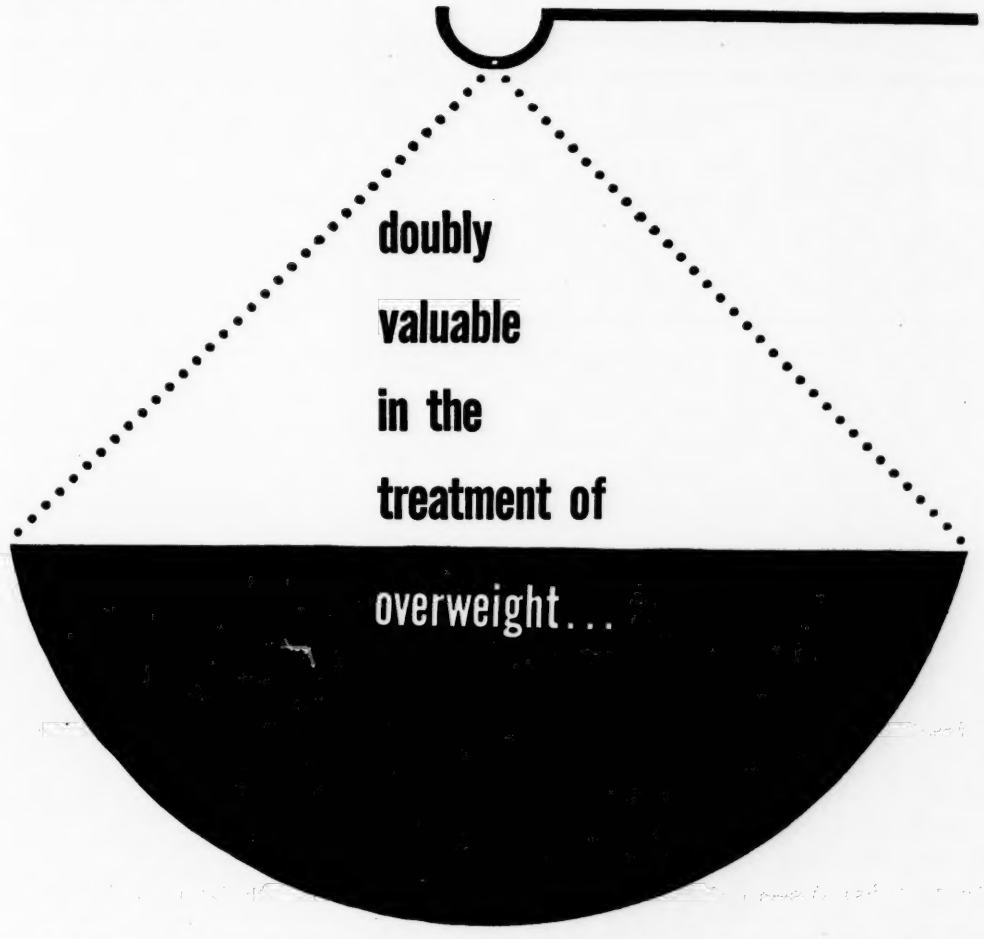
PROVIDENCE MEDICAL ASSOCIATION

A regular meeting of the Providence Medical Association was held at the Medical Library on Monday, December 2, 1946. The meeting was called to order at 8:30 p. m. by President Paul C. Cook.

The minutes of the previous meeting were read by the secretary.

The secretary reported for the executive committee that in accordance with the by-laws it had prepared a slate of officers for nomination at the annual meeting of the Association on January 6, 1947, and that any counter-nominations must be made in writing, signed by ten members of the Association and delivered to the secretary at least

continued on page 54

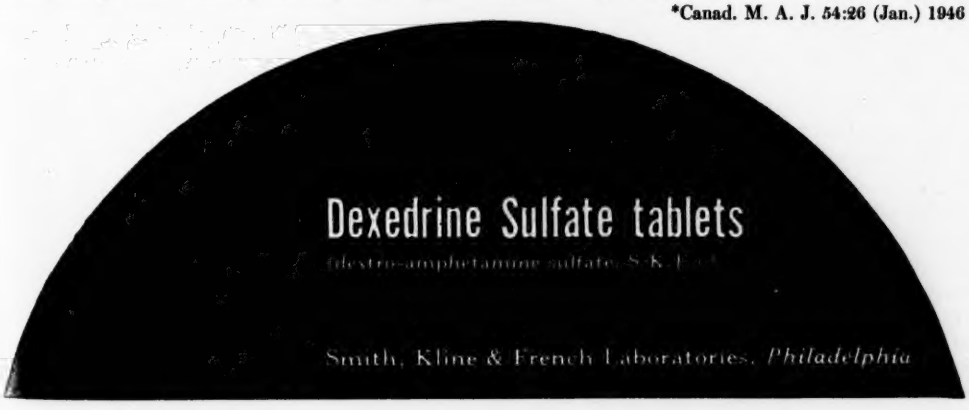


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*Canad. M. A. J. 54:26 (Jan.) 1946



PROVIDENCE MEDICAL ASSOCIATION

continued from page 52

ten days prior to the annual meeting. He reported the proposed slate as follows:

President ..... Guy W. Wells, M.D.
Vice President ..... Philip Batchelder, M.D.
Secretary ..... Daniel V. Troppoli, M.D.
Treasurer ..... J. Murray Beardsley, M.D.
Exec. Com. 5 yr. terms ..... Paul C. Cook, M.D.
Charles Bradley, M.D.

Member of Council of R. I. Medical Society (2 year term) ..... B. Earl Clarke, M.D.
Trustee of R. I. Medical Library (1 year term) ..... Lewis B. Porter, M.D.

Delegates to the House of Delegates of the Rhode Island Medical Society:

Robert Baldridge, M.D.	Edward Famiglietti, M.D.
Alex M. Burgess, M.D.	Peter F. Harrington, M.D.
Peter Pineo Chase, M.D.	William A. Horan, M.D.
B. Earl Clarke, M.D.	Albert H. Jackvony, M.D.
G. Edward Crane, M.D.	Herman A. Lawson, M.D.
Frank B. Cutts, M.D.	Arthur E. Martin, M.D.
William P. Davis, M.D.	Frank I. Matteo, M.D.
Paul C. Cook, M.D.	Patrick I. O'Rourke, M.D.
Daniel V. Troppoli, M.D.	Edwin B. O'Reilly, M.D.
Louis I. Kramer, M.D.	Donald L. DeNyse, M.D.
Edward A. McLaughlin, M.D.	Robert Drew, M.D.
	U. E. Zambarano, M.D.
Guy W. Wells, M.D.	Russell R. Hunt, M.D.
Philip Batchelder, M.D.	Frederick A. Webster, M.D.
Michael O'Connor, M.D.	David Freedman, M.D.
John C. Myrick, M.D.	

Dr. Edward S. Cameron, chairman of the Committee on Smoke Abatement, reported on the introduction of a new city ordinance to control smoke. He briefly reviewed the developments of the ordinance and the fact that a hearing had been held this day before the City Council Committee.

The secretary reported that the Executive Committee recommended for election to active membership in the Association the following physicians: William J. H. Fischer, Jr., M.D.; Robert L. Garrard, M.D.; Vahey M. Pahigian, M.D.; James A. Reeves, M.D.

Dr. Guy W. Wells moved the unanimous election of these nominees. The motion was seconded and passed.

Dr. Paul C. Cook introduced Dr. Vincent J. Oddo who presented a case report on "Simple Cyst of the Renal Pelvis."

Dr. Oddo pointed out that cysts in the region of the renal pelvis are relatively rare. Pain in the kidney region is a constant symptom with this abnormality. A case was presented which was very well illustrated with slides of x-rays taken before and after surgical removal of the cyst.

Dr. Cook presented Dr. Fritz Behrendt of the State Hospital for Mental Diseases who spoke on "Treatment of Hypertension with Rice Diet." This study was conducted at the State Infirmary on 17 female hypertensive patients with diastolic pressures of 110 or over. They were observed for a control period of six weeks and then half of them were put on a rice diet. This consists of any kind of rice without salt, milk or fat. Fruits and fruit juices are taken and sugar and honey may be taken. Vitamins are added. On the diet there was reduction in blood pressure, particularly in the systolic component. Patients seemed to respond whether or not there was evidence of some renal disease.

The final presentation of the scientific program was given by Dr. Joseph N. Corsello, former assistant superintendent of the State Sanitorium, whose subject was "Primary Bronchogenic Carcinoma." A study of 47 cases, which were observed over a 13-year period at the Wallum Lake Sanitorium, were analyzed. In all instances, except one, the diagnosis was made ante-mortem and in 41 of the 47 cases, there was histologic proof of the diagnosis. In only 14.8 per cent of the cases, was the diagnosis suspected prior to admission to the sanitorium. Physical examination was of limited value in making the diagnosis and the x-ray showed a highly variable picture. It is of some interest that in 80 per cent of cases, the growth occurs in the trachea or major bronchi and is accessible to bronchoscopic examination. In 9 of the cases, total pneumonectomy was performed and of that total 3 are now alive and well. Forty-one of the group are known to be dead. Because of the insidious growth of these tumors, Dr. Corsello pointed out the inevitable high mortality and indicated that the only hope of improvement lay in earlier diagnosis with prompt investigation of symptoms and perhaps in the use of x-rays from mass surveys for tuberculosis to pick up pre-clinical carcinomas.

The subject was briefly summarized by Dr. O'Brien and discussed by Drs. Ham and Batchelder.

The meeting adjourned at 10:30 p. m.

Attendance—82.

Collation was served.

Respectfully submitted,

FRANK B. CUTTS, M.D., *Secretary*

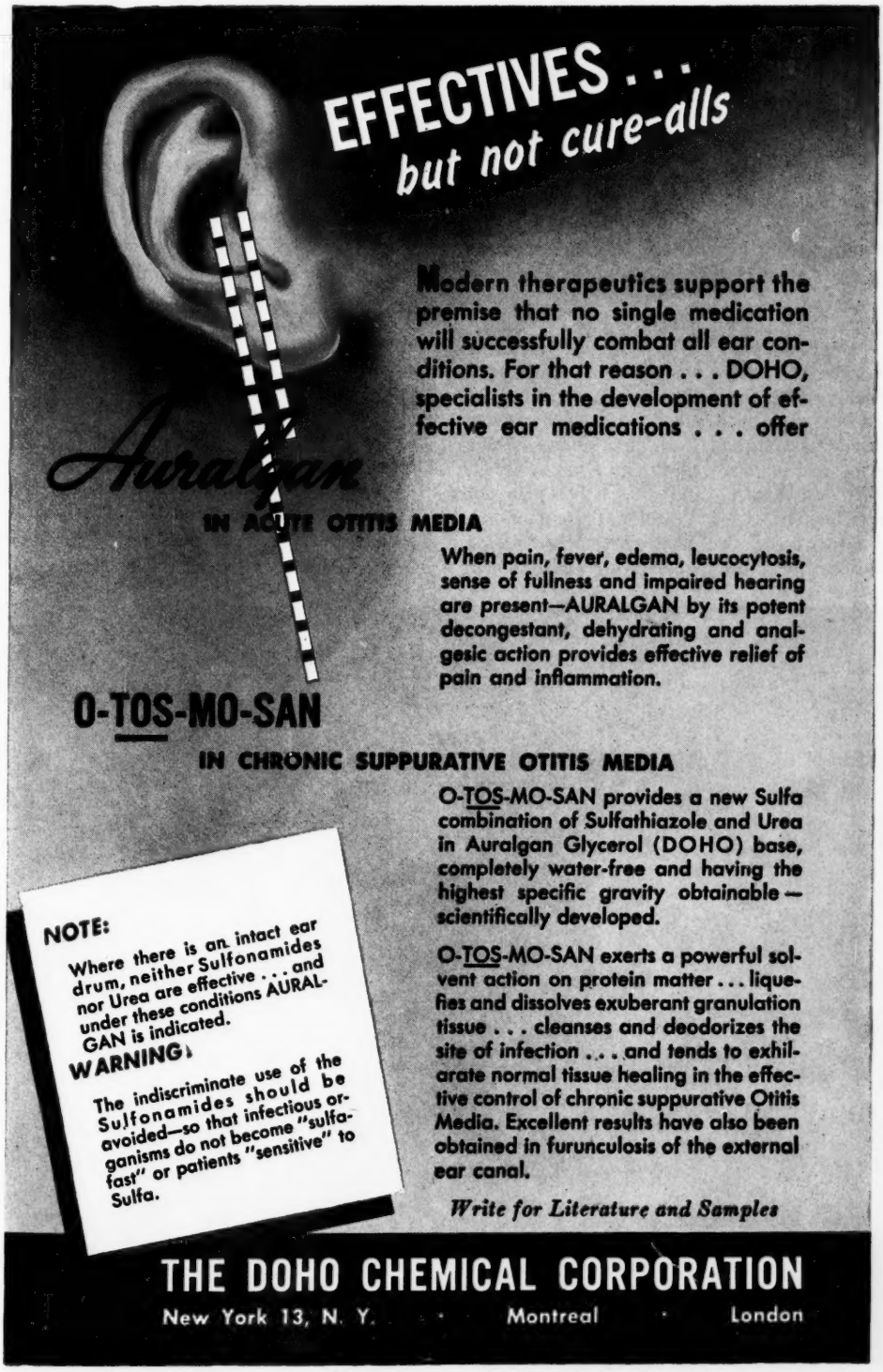
PAWTUCKET MEDICAL ASSOCIATION

The regular monthly meeting was called to order by President Dr. William Kalcounos in the Nurses' Auditorium of the Memorial Hospital at 9:00 p. m. November 21, 1946.

The minutes of the previous meeting were read and accepted.

The applications for membership in the Pawtucket Medical Association of Dr. Bert Simmons Jeremiah and Dr. Henry Edward Turner were unanimously approved after they had been submitted to ballot. The Secretary reported that the Standing Committee had approved Dr. Louis E.

continued on page 56


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PAWTUCKET MEDICAL ASSOCIATION

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Hanna for membership in the Association and his application will be voted upon at the next meeting.

A motion was made and seconded that the Medical Association note in its records that recognition accorded a member and present Councilor of the Association, Dr. James L. Wheaton, by the trustees of the Memorial Hospital at its annual meeting wherein he was elected President of the Board of Trustees.

A motion was made and seconded that action regarding a request from the Community Chest be tabled.

The meeting was then turned over to Dr. Henry Hanley who had arranged the program. Dr. Hanley observed that there was much in the art of medicine as well as in the science of medicine and for that reason he had asked some of the older members of the Society to discuss some of their interesting and unusual cases. Dr. Irving Farrell, Dr. Earl Mathewson, and Dr. Albert Gaudet speaking for Dr. E. A. Cormier, thereupon discussed a variety of cases that adequately fulfilled the requirement of being interesting and unusual.

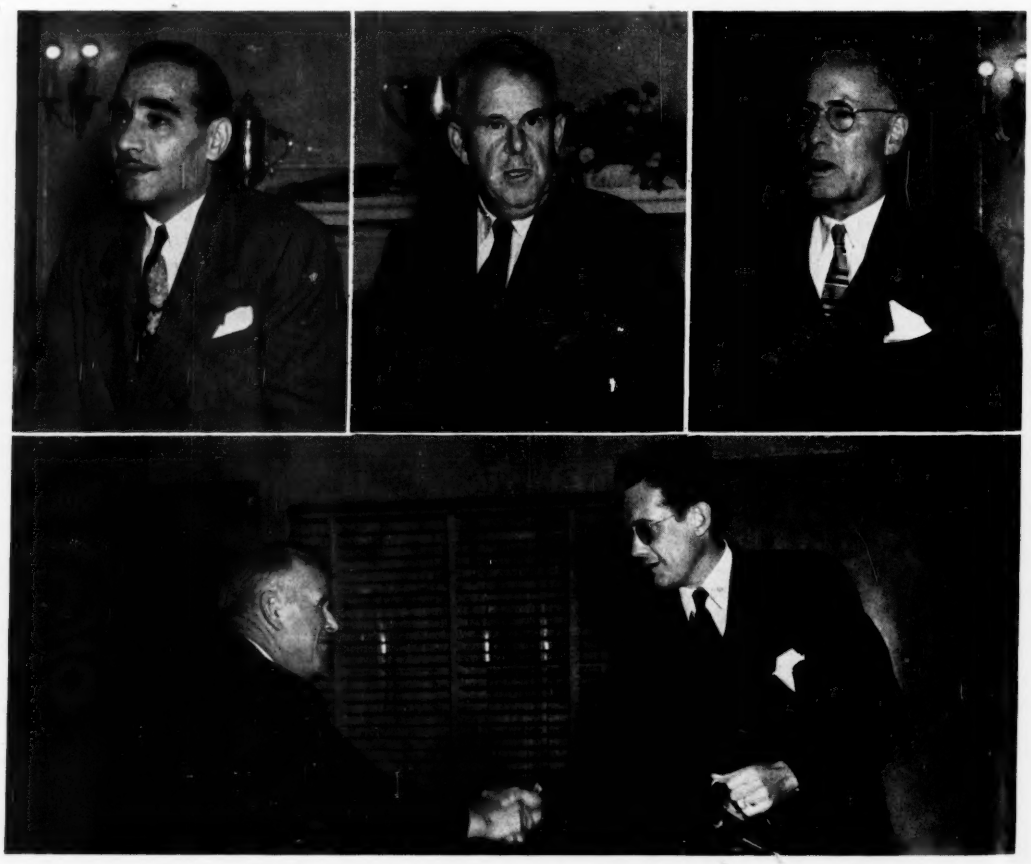
The meeting adjourned at 10:15 p. m. and refreshments were served.

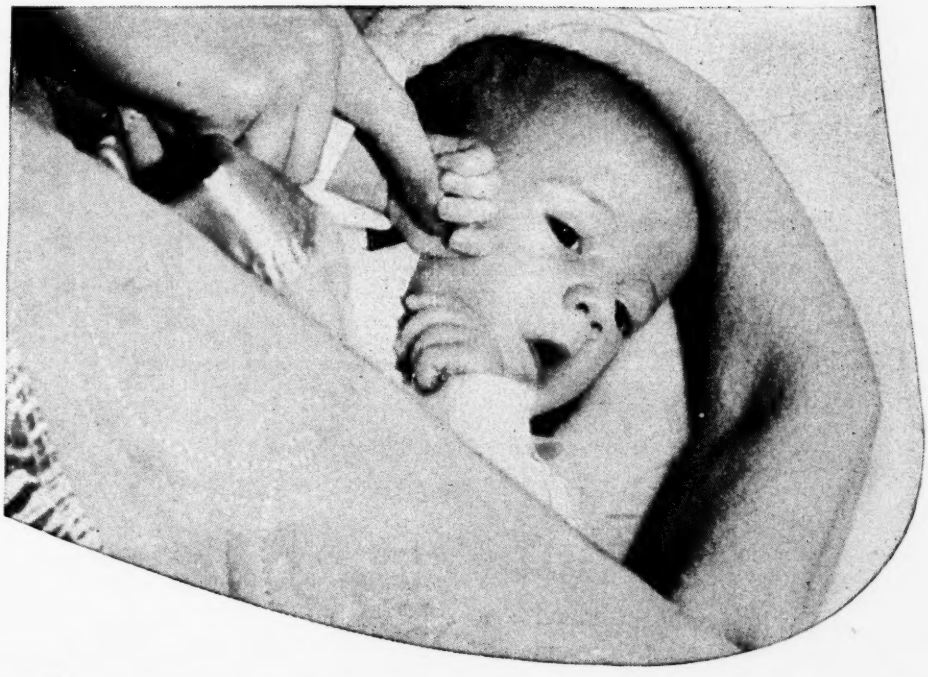
The following members were present: Drs. Barry, Beaudoin, Boucher, Doll, Irving Farrell, Ferguson, Foster, Gaudet, Henry Hanley, Frank Hanley, Hennessey, Hecker, Stephen Kenney, Krolicki, Laverning, Lussier, Laurelli, Mara, Mathewson, McCaughey, McGinn, O'Brien, Ronne, Senseman, Smith, Sprague, R. T. Stevens, L. Turner, Umstead, Webster, Wheaton, Zolmian, Eddy, and Moor.

Respectfully submitted,

KIERAN W. HENNESSEY, M.D., *Secretary*

PHOTOS BELOW: Top row, speakers at annual dinner of the Providence Medical Association. Left to right—Dr. Herman P. Grossman, chairman of entertainment committee, Dr. Paul C. Cook, president, and Dr. Guy W. Wells, vice president. Bottom photo shows Dr. Cook awarding President's golf trophy to Dr. Harry Darrah.





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THROUGH . . .  the Microscope

No Danger?

Although Governor Green of Illinois, speaking to the secretaries and editors of the state medical associations at their conference in Chicago on December 8, expressed the opinion that the "danger" of the adoption of a plan to socialize medicine was no longer present, we are inclined to be less optimistic. "It is natural," said the Governor, "that in a period when collectivist philosophies were sweeping the world proposals for some sort of state medicine . . . should take hold with many people." These proposals found favor, he added, because they were offered in conjunction with "other sound health measures which have your support".

Sickness Compensation

Disability pay for time lost from work because of illness is being paid California workers as in Rhode Island. Under the California law commercial insurance firms and voluntary insurance plans can compete with the state-organized Unemployment Insurance Disability Fund for the insurance provided they meet the minimum benefit payments from $10 to $20 a week up to a maximum of 23 weeks a year as authorized by the law. The New Jersey legislature will consider a plan for disability insurance this session with the major debate apparently centering on whether it will be a state operated program, like Rhode Island's, or a plan whereby private insurance companies will compete for the business meeting at least the minimum state provisions now suggested at $7 to $22 a week with a maximum of 13 weeks for each period of disability. Both California and New Jersey have profited by Rhode Island's experience to the extent of eliminating maternity benefits.

Fellowships

The Surgeon General of the U. S. Public Health Service has announced that applications for Fellowships in post-graduate public health training for physicians for the school year beginning next fall will be received anytime prior to May 1. These fellowships aimed for the specific purpose to help fill hundreds of vacancies existing in State and local health departments throughout the country are intended for newcomers to the public health field, and they are made possible by a grant of more than two hundred thousand dollars from the National Foundation for Infantile Paralysis.

Milk

The Milk Industry Foundation has recently published a new survey to show how the United States has grown to be the greatest of dairy nations. Of particular interest was the increasing importance of Rhode Island as a dairy state. Pertinent facts about our so-called "littlest" state: Our 21,000 cows produce $5,295,000 cash farm income for dairy farmers. Yearly milk production is 62 million quarts. Principal use of this milk in addition to fresh milk was for making nearly 2¼ million gallons of ice cream.

Medical Service Conference

The 20th Annual Meeting of the National Conference on Medical Service will be held at the Palmer House, Chicago, on February 9. The program will include discussions in the fields of national affairs, economics, and medical education. All physicians are invited to attend, and there is no registration fee.

Meetings

It is not too early to make hotel applications for the American Medical Association meeting at Atlantic City starting the week of June 9. This is the Centennial Year for the AMA and the largest attendance ever at the national assembly is anticipated. And speaking of Atlantic City we are reminded that the American Public Health Association will hold its 75th annual meeting there the week of September 22.

Persons

Dr. Stanley Sprague, chairman of the R. I. Medical Society's committee on industrial health, is now president of the New England Council of the American Association of Industrial Physicians

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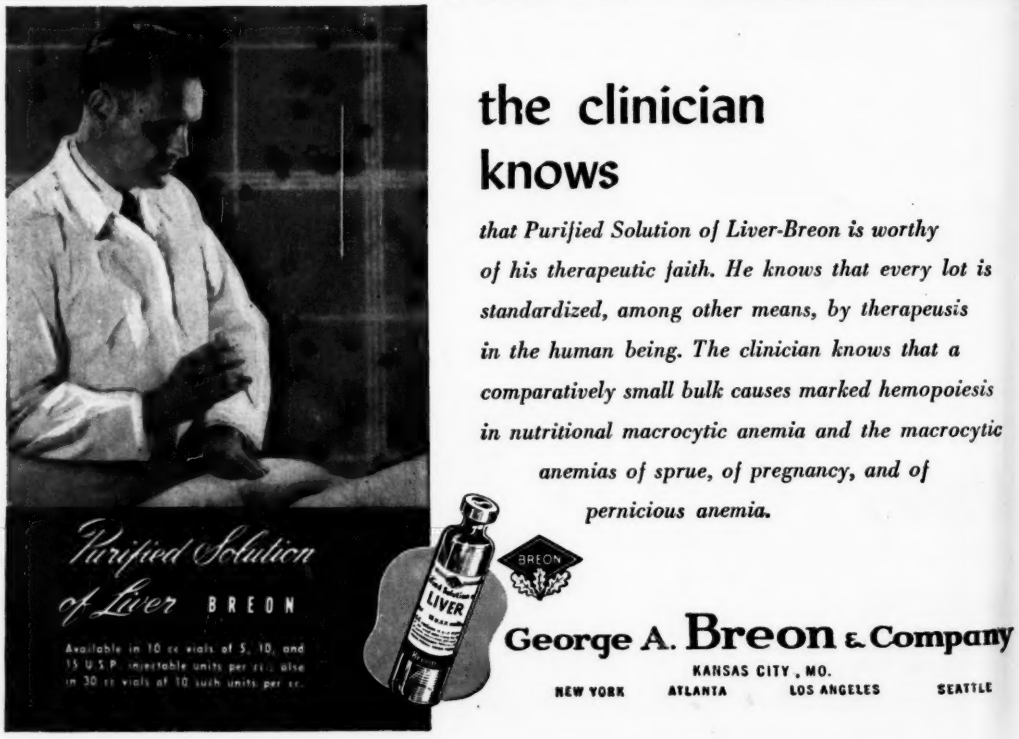
THROUGH THE MICROSCOPE

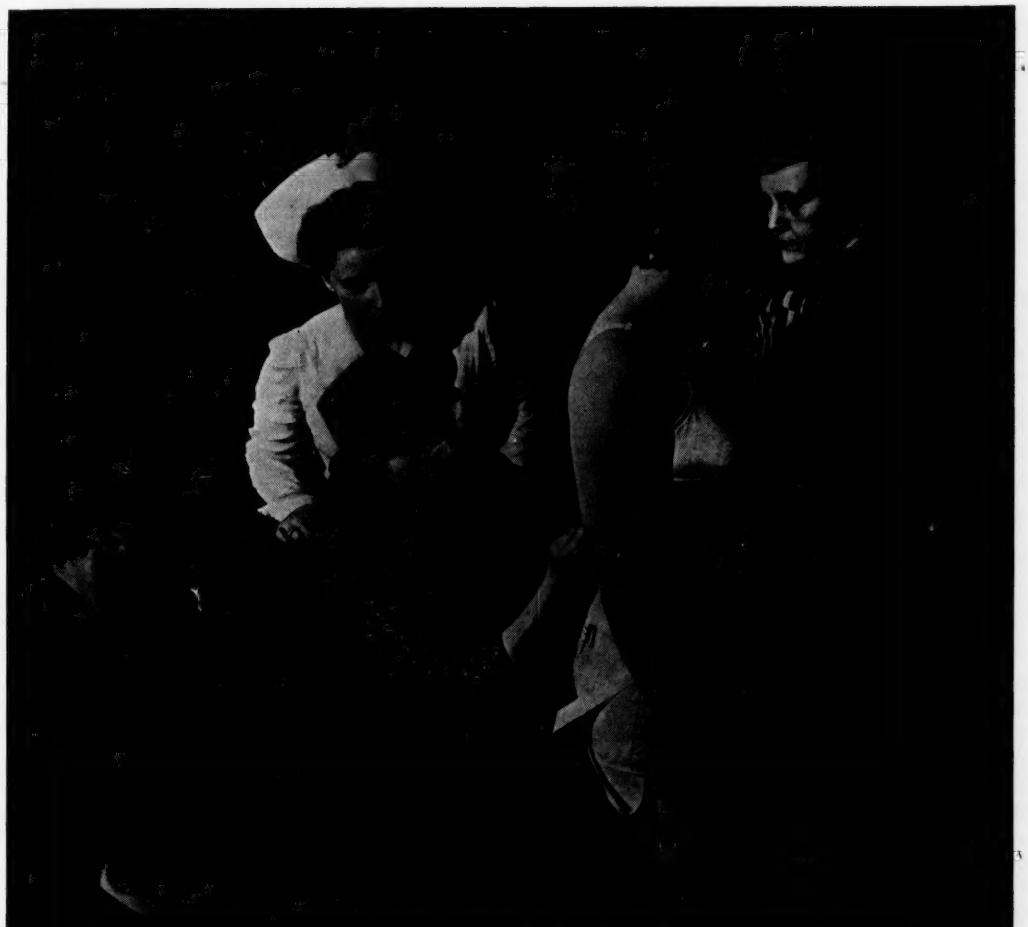
continued from page 58

and Surgeons. . . . Dr. Francesco Ronchese had an exhibit entitled "Hemangiomas — Should Treatment be Expectant or Active?" at the 5th annual meeting of the American Academy of Dermatology and Syphilology held in Cleveland last month. . . . Governor Kim Sigler of Michigan who was publicized in a popular national magazine this month as a man who gets things done has as his first assistant Dr. Eugene C. Keyes, a Detroit resident who is a physician, dentist and attorney. . . . For those who are historically minded it is a matter of record that the first American degree of doctor of medicine was conferred by the General Court of Rhode Island in 1663 when Captain John Cranston was licensed to practice "Chirurgerie" and to administer "physick".

MANY AMERICANS IMMUNE TO MUMPS

Thirty per cent of the American people probably have had mumps without knowing it. The result has been a high degree of immunity to epidemics of this common, but sometimes quite serious, disease of childhood. Such is the conclusion from studies of 50 groups of children and adults conducted by University of Pennsylvania and Harvard University medical scientists under a contract with the Commission on Measles and Mumps of the Surgeon General's Office, United States Army. Mumps and measles usually are paired as childhood maladies. Each is caused by a specific filterable virus. Both diseases are very contagious. One virus presumably is a widely disseminated in the population as the other. Yet the studies reported by Doctors Elizabeth P. Maris, John F. Enders, Joseph Stokes, Jr., and Lewis W. Kane, show that about 33 per cent of young adults have a probable acquired immunity to the disease indicating some past infection of which they were unaware. One attack of mumps is believed to protect an individual against further attacks of the virus for the rest of his life. Statistical studies have shown that whereas about 90 per cent of the American population suffer from measles at some time or other only 60 per cent are victims of mumps. The immunity of a person was determined by the so-called "complement-fixation" test of the blood serum with mumps virus cultivated in incubated chicken eggs, and also by a skin test with similar material. In this hidden reservoir of acquired immunity, mumps seems to bear some likeness to poliomyelitis, also a virus disease of children. It is believed that about 90 per cent of the population have had polio in a sub-clinical form at some time, with the result that they are permanently protected against it. The reasons why mumps should attack some persons in such a mild form that it is not recognized—it may amount to no more than a slight headache or an "out-of-sorts" feeling— is unknown. The technique of determining immunity may prove of considerable value in times of mumps epidemics when the relative susceptibility of a population can be determined before undertaking defense measures.





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RHODE ISLAND MEDICAL SOCIETY, NECROLOGY, 1946

RAYMOND G. BUGBEE, M.D., surgeon at Rhode Island Hospital for many years and athletic surgeon at Brown University since 1927, died February 3, 1946, in his 64th year. Dr. Bugbee was born in North Attleboro, Massachusetts, on December 11, 1882. He was graduated in the class of 1906 from Brown University, and in 1909 he received his degree of M. D. C. M. from McGill University Medical School. He was the first American Student at McGill University to win the Nood Gold Medal for diagnostic proficiency. Dr. Bugbee was a member of the Providence Medical Association, and he became a Fellow of the Rhode Island Medical Society in 1912.

EDWARD CAMPBELL, M.D., a practicing physician in Providence for forty-six years, died on January 26, 1946. Dr. Campbell was born in 1867 in County Tyrone, Ireland. He graduated with honors from the College of Physicians and Surgeons, Baltimore, Md., in 1899. Soon after that he came to practice in Providence, and became a member of the Providence Medical Association and the Rhode Island Medical Society in 1903. Dr. Campbell was one of the first of his profession to become interested in physiotherapy, and he specialized in that field for the last decade of his life.

IRVING SHERBURNE COOK, M.D., was born in West Wrentham, Massachusetts, on March 3, 1858. He was graduated in 1881 from Tufts College and from Harvard Medical School in 1886. Immediately after his graduation he took Dr. Nutting's place in Georgiaville and practised medicine there for 58 years, the rest of his life. In Smithfield he served in a public capacity as health officer for 32 years, on the school committee for 16 years, and an organizer of medical inspection of schools. He became a member of the Providence Medical Association and the Rhode Island Medical Society in February, 1912. Dr. Cook died September 9, 1946, at the age of 88 years.

JAMES AUSTIN GILBERT, M.D., died in Providence on May 17, 1946, at the age of 79. He was born in Wreck Hill, Somerset Bridge, Bermuda, April 4, 1867. At the age of 13 he was sent to Toronto, Canada, where he stayed until his second year in college, which was completed at Howard University, Washington, D. C., in 1891. He then entered medical school there, graduating in 1894, and interned at the Freedman's Hospital in Washington, D. C. Dr. Gilbert then came to Providence and engaged in general practice for over fifty years. He became a member of the Providence Medical Association and the Rhode Island Medical Society in 1894.

KATHRYN ANNE HARDY, M.D., was born in Auburn, New York, on February 16, 1911. She attended Syracuse University in 1928-1929 and the College of New Rochelle in 1929-1931 and received her doctor's degree from Tufts Medical College in 1935. Dr. Hardy gave up her medical career after her marriage until the war, when she began practice in Warwick. Dr. Hardy was a member of the Kent County Medical Society, the Providence Medical Association, and the Rhode Island Medical Society. She died on March 7, 1946, at the age of 35.

HOWARD FRANCIS KEEFE, M.D., was born in Providence, Rhode Island, May 4, 1898. His Bachelor of Arts degree was received from Boston College in 1920, and his Medical degree was granted by Tufts Medical College in 1924. Following the completion of an internship at St. Mary's Hospital in Philadelphia, Dr. Keefe established his office for the general practice of medicine in Cranston, where he practiced continuously until 1941 when his career was interrupted by illness. He became a member of the Providence Medical Association in 1927 and the Rhode Island Medical Society in 1943. He died on March 13, 1946.

MICHAEL BERNARD MILAN, M.D., died January 20, 1946. He was the oldest living practitioner in Rhode Island, born in Milford, Massachusetts, on March 16, 1862. He attended Amherst College and received his medical degree from Bellevue Hospital in 1892. He became a member of the Providence Medical Association in 1904, and he was also a member of the Rhode Island Medical Society. Dr. Milan came to Olneyville in 1893 where he lived until the time of his death.

MICHAEL JOSEPH O'NEIL, M.D., a practicing physician in South Providence for 30 years, died February 2, 1946 in his 72nd year. Dr. O'Neil

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NECROLOGY, 1946

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was born on June 19, 1874, in Worcester, Mass. He received his medical degree from Jefferson Medical College in 1903. Dr. O'Neil was a member of the Rhode Island Medical Society.

JOHN MATHEWS PETERS, M.D., retired superintendent of the Rhode Island Hospital, died January 27, 1946, in his 83rd year. He was born November 2, 1863, in Syracuse, New York. After attending the public schools, he went to Phillips Exeter Academy, and then to Harvard Medical School, from which he graduated in 1887. Near the end of his two years' internship at the Rhode Island Hospital he was appointed superintendent of the Hospital in 1889, which was an unusual honor. He served in this capacity for forty-four years. Dr. Peters was president of the Providence Medical Association from 1900-01, and the Rhode Island Medical Society from 1919-20. He was also a member of the Providence Board of Hospital Commissioners from its creation in 1909. Dr. Peters was past president of the American Hospital Association, and the New England Hospital Association.

ALANSON D. ROSE, M.D., a pioneer physician in the Manton section of the city, died February 19, 1946. He was born on Block Island, June 13, 1866, and attended Worcester Academy and Albany Medical College, Albany, New York, from which he received his medical degree in 1889. He became a member of the Providence Medical Associaation and the Rhode Island Medical Society in 1904.



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ARMY REPORTS ON USE OF STREPTOMYCIN

The new anti-infection agent, streptomycin, which is in the same general class as penicillin, appears effective in appropriate doses against more than half the infective bacterial organisms ordinarily encountered by surgeons, according to the report to The Surgeon General's Office from the Halloran General Hospital. Clinical studies of the use of the drug throughout the army have been submitted and evaluated at Halloran.

On the other hand, it apparently has specific poisonous effects when given over an extended period, and bacteria soon become resistant to it so that it probably can be used only once with maximum effect within a limited period on the same patient.

The drug became available only late in the war and is still scarce and expensive.

Army experience with the drug is probably the most extensive to date due to the ability to compile and follow results. Outside the services because of limited opportunities to observe results in large numbers there have been varied, and sometimes quite exaggerated, reports on its value and it often is referred to popularly as a "miracle drug." From the first careful observations of its effects have been carried out by army doctors by orders of The Surgeon General, and these are being continued. The findings to date are summarized in the Army Medical Bulletin of November 1946.

The observation of the ability of bacteria to develop resistance to the drug after a few days may be of particular importance at this time. The same has been noted in respect to both the sulfa drugs and penicillin, but apparently the phenomenon is more pronouced with streptomycin. In at least one case, test tube experiments showed, there was a 100-fold increase of the resistance of an organism in ten days. Given indiscriminately, the drug may lose any value for a particular type of infection in an individual for the rest of his life. Improper use may cause variation and selection in disease agents so that streptomycin is no longer effective for the infection where it is of greatest value at the present time.

Bacteria, on the basis of certain chemical reactions, ordinarily are divided into two classes—gram positive and gram negative. The new drug, in test tube experiments, seems effective in varying concentrations, against 60 per cent gram positive and 80 per cent gram negataive organisms ordinarily encountered in surgery.

Of paramount importance, is determination whether a specific micro-organism is susceptible to the drug before it is administered by mouth, by injection, or direct application.

The army experience bears out previous claims that streptomycin is of especial value in clearing up infections of the urinary tract, provided that the organisms causing the infections are susceptible ones. If the treatment is not entirely effective in three days ordinarily no good results can be expected from its continuation. In gonorrheal infection which has proved resistant to both sulfadiazine and penicillin outstanding results have been obtained.

Use in army hospitals gives no support to claims that the drug is of value in infections of the prostate. The drug is not concentrated in that organ.

It was found to have very little value against bone infecions, except when used in conjunction with surgery where there could be direct application.

Thus far streptomycin has not given dramatic results in peritonitis, but its continued use as an auxiliary treatment seems justified.

In various dysenteries due to susceptible bacteria considerable benefit has been noted, sometimes when the drug is given by mouth alone.

In septicemia—still provided that the organism responsible for the infection is a susceptible one—streptomycin has proved very effective, but it is still essential that unapproachable foci of infection be removed by surgery.

The substance has little value, so far as the army experience goes, against typhoid fever and it is apparently of no use in controlling carriers of this disease.

In undulant fever there have been apparent clinical arrests of the infection from the combined use of streptomycin and sulfadiazine after each drug given alone had failed. Further study will be required, however, before any valid conclusions can be reported.

It is very effective against tuleremia, or rabbit fever, provided the specific organism responsible has been demonstrated in test tube experiments to be susceptible to the drug.

Up to date experience with only a few cases of meningitis have been reported and the results, in conjunction with other treatments, have been quite good. The Army doctors found, however, that it must be given by injection into the space between the thick membranes surrounding the brain and spinal cord and the brain or spinal cord tissue. Circulating in the blood stream, it cannot pass this barrier to reach the infecting organisms.

Excellent results have been obtained with direct application of the drug to infections of the external ear, the pleural cavities and the brain. Infections elsewhere will not reach local foci of infection in sufficient concentration to be effective.

One of the hopes of the medical profession has been that streptomycin would prove of some value against tuberculosis. The army experience neither confirms nor refutes this since a much longer series of investigations will be required before there can be any valid conclusions.

Balances against the demonstrated value of streptomycin in suitable cases are some apparently toxic effects. Some of these are probably due to impurities in the drug but others seem to be specific for the drug itself. The most serious of these is what seems to be an irreversible damage to part of the eighth cranial nerve which appears when streptomycin is given in large doses by injection for more than ten days. This means that one's sense of balance may be disturbed for a long time, with possible attacks of dizziness and nausea. This was found in two army cases. A third patient showed partial deafness, indicating that there had been a poisonous effect on the other portion of the eighth cranial nerve, which is the path of hearing. Toxic effects also were noted on the kidneys. All this demonstrated that the drug should be given only by physicians, and then only after careful consideration of the organisms involved and the safe dosage.



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